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Mr. President---

How Is Your Health?

Mr. PRESIDENT

How Is Your Health?



Karl C. Wold, M.D.

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This book is affectionately dedicated to
BETTY, MARY, KEITH and SIDNEY,
my daughters and sons,
and to the thousands of American boys
whose mothers hope that some day
they will be President.

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Introduction

Nearly everybody finds the subject of disease and health a fascinating one. In personal experience, in everyday conversation, even in the endless jokes about women discussing their operations, we see reflected a great interest in and curiosity about the causes and effects of human illness. This is a very natural interest, for not only is the human body an intricate and delicately balanced contrivance, but upon the proper functioning of it our very lives depend. When this interest is focused on the health of some of the greatest leaders our country has produced, our curiosity is doubly aroused, for the stories of the lives of great men often serve as object lessons and challenges to the rest of us. It has been observed, too, that men's behavior under the influence of pain and illness often gives the truest picture of their basic characters and capabilities.

All of these factors combined to create in me a desire to know more about the medical histories of our Presidents—the state of their health throughout their lives, the possible effects of their health upon our history, the nature of their fatal illnesses, and the exact causes of their deaths. For a physician, of course, this study had the added attraction of coming under the heading of shop talk, in which physicians, like everyone else, love to indulge.

I discovered that many of the biographies of our Presidents gave little information about their medical histories, either because of the author's lack of interest in that particular aspect of his subject's life or because such information had not been easily obtainable. A thorough search of the literature revealed also that no collection of medical facts concerning all the Presidents had been published. And so the quest began.

Of necessity, much of the material used in these chapters has been obtained from articles by physicians printed in both medical and nonscientific publications and for which I can lay no claim to originality. Especially is this true of the chapter on George Washington, which with very few additions is taken from a paper written for and published in the *Proceedings of the Staff Meetings of the Mayo Clinic*, 1942. The co-authors of this article are F. A. Willius, M.D., M.S. in Medicine, Section in Cardiology, and T. E. Keyes, M.A., reference librarian of the Mayo Clinic, who gave their kind permission to use this article. In 1933, Dr. Milton H. Shutes of Oakland, California, wrote a book entitled *Lincoln and the Doctors* which not only reveals Lincoln's relationship to his personal physicians and doctor friends, but is also a very intensive study of his entire medical history. With the author's permission, much of this material has been incorporated into the chapter on Lincoln.

INTRODUCTION

In the writing of this history, an attempt has been made to avoid or to explain fully any medical or technical terms that might not be familiar to the layman. Each chapter follows to some extent the outline of an ordinary medical case history rather than a purely narrative style, so that the medical events rather than the political or personal triumphs form the highlights of each President's story. In some chapters, especially in those on the earlier Presidents, there are gaps of many years because there is no medical data known or obtainable.

Sincere appreciation and thanks are due to a host of those who have conscientiously and capably aided me in making this volume possible. Space limitations prevent listing all of them, but grateful acknowledgment by name is hereby tendered to the following:

Dr. F. A. Willius and T. E. Keyes for permission to use their very comprehensive work on George Washington as a basis for the initial chapter.

Dr. Milton H. Shutes, who so kindly gave his consent to use material from his book on Lincoln.

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Dr. S. B. Harper, of the Mayo Clinic, who wrote a letter from the jungles of the New Guinea mountains giving permission to use his illustrations.

The writing of this medical history of the Presidents has been very interesting and instructive to me. I hope that in some small way this pleasure may be transmitted to the reader.

KARL C. WOLD, M.D.

Saint Paul, Minnesota

January 5, 1948

George Washington

1732-1799

JUDGED by any standards, George Washington was a great soldier and statesman, but when it is realized how many of his achievements were accomplished in the face of sickness, fever, and bodily pain, he gains an almost superhuman stature. Though infectious diseases were extremely prevalent in colonial days, Washington certainly contracted more than his share. The fact that he was able, in spite of these handicaps, to lead and win the exhausting and arduous Revolutionary campaign, and later to serve two turbulent terms as the first President of his new country, is an eternal testament to his vigorous constitution and indomitable will.

Born on February 22 (February 11 by the old calendar), 1732, Washington spent the earliest years of his life in a single-storied, low-pitched frame dwelling about half a mile from the Junction of Pope's Creek and the Potomac in Westmoreland County, Virginia. His father, Augustine Washington, a widower, was already the father of four children when he married his second wife, the beautiful Mary Ball, and George was the first of their six children. There is some evidence that, as a young child, Washington was not robust, and it is known that relatives on the paternal side of his family were short-lived.

It may have been these considerations that led his parents to encourage young George to become interested in outdoor life and sports. As a boy he engaged in many wholesome activities—wrestling, running, pitching quoits, fox hunting and horseback riding—all of which undoubtedly contributed to his ultimate sturdy physical development. Later, as a young surveyor, he also had ample opportunity for outdoor life and exercise. Many of these recreational pursuits were continued during his later life. His love of fox hunting, for example, is often mentioned in his personal papers, and even after his retirement from public life he frequently covered fifteen miles a day on horseback.

As far as is known, Washington's boyhood was little troubled by sickness, except for an illness designated as "black canker," a term used loosely in those days to mean diphtheria. He evidently recovered without complications. Deductive reasoning seems to indicate that some time during this period he also contracted measles, for later in his life when his wife was stricken with this contagious disease Washington escaped infection, which suggests that he had acquired immunity to it from a previous attack.

By the time Washington had reached full manhood he was a fine physical specimen. Lafayette, who knew Washington intimately, described him at the Battle of Monmouth, when he was in his forties, in these words: "I

thought then, as now, that never had I beheld so superb a man." His height has been variously stated as being 6 feet to 6 feet 3 inches. Varying figures have been recorded regarding Washington's weight, ranging from 175 pounds at the age of twenty-seven in 1759, to 230 pounds in 1798, a year before his death. He had a powerful frame, of equal breadth from shoulders to hips. His chest was broad but hollowed in the center, possibly from previous tuberculosis of the lungs or from rickets, although there are no records to substantiate this possibility. His joints, hands, and feet were exceptionally large. When he was thirty-one years old, Washington ordered a suit from a London tailor, giving the following measurements: "6 ft. 3 in. tall and proportionably made, rather slender for a man of that height, and long limbs."

His habits of life, except when he was occupied by momentous problems that forbade self-protection, were, with few exceptions, commendable. He arose at daybreak and usually retired at a reasonably early hour. He was methodical himself and demanded punctuality from those associated with him. On one occasion, during his presidency, his secretary apologized for being five minutes late, explaining that his watch had stopped. "Then, sir," retorted Washington, "either you must get a new watch or I must get a new secretary." He did not smoke, and when it was necessary for him to take a whiff of the peace pipe when in conference with the Indians, even the need for diplomacy could not keep him from making a wry face. He used snuff, however, according to the genteel custom of his time, but not habitually. In Washington's early days he played cards at times, and for high stakes, but later, as his time became more occupied, he discarded this recreation for others of a more staid character. He was fond of the theater and regularly attended balls. In the six years from 1768 to 1774, as recorded in his diary, he went fox hunting 155 times, attended races sixty-one times, the theater thirty-seven times, went "gunning" twenty-one times and attended twenty-nine balls. Evidently he recognized the truth of the maxim, "All work and no play makes Jack a dull boy."

Washington drank alcoholic beverages freely, but seldom to excess. He was a genial and hospitable host and always served wine, usually Madeira, at dinner. When dining with his family he usually limited himself to two or three glasses of wine, but when guests were present he is said to have toasted each with a glass. John Loudon of Wilmington wrote in his diary:

"Gen'l H[amilton] told us Gen'l Washington, notwithstanding his perfect regularity and love of decorum, could bear to drink more wine than most people. He loved to make a procrastinated dinner—made it a rule to drink a glass of wine with every one at table and yet always drank 3-4 or more glasses of wine after dinner, according to his company and every night took a pint of cream and toasted crust for supper."

One writer summed up Washington's character in the statement that "he was simple, overly direct, often coarse but never vulgar, fearless of physical danger and possessed of a combination of honest frankness and a never failing sense when not to speak." Such attributes as these could lead no man far astray.

At the age of twenty-six, Washington was recovering from an illness and went to Williamsburg to consult Dr. Amson. While there, he met the widow of Colonel Daniel Parke Custis. His health improved during his visit, and after a month he became engaged to Martha Dandridge Custis, whom he married on January 6, 1759, less than a year after their first meeting. Although this marriage appeared to be successful, it was admittedly not a venture of true love. Throughout his life, Washington was said to have loved Sally Cary Fairfax, the wife of his friend, neighbor, and first employer, with an "absorbing but unsatisfied passion." He made no attempt to conceal his futile attachment, which became an accepted and tolerated reality for both families and their intimate friends. His failure to have children of his own was another keen disappointment to Washington, and may in some measure account for his marital unhappiness. Although the many guests at Mount Vernon, invited and otherwise, probably helped to some degree to relieve his domestic loneliness, the word that appears most frequently in the diary he kept during this period is "alone."

Throughout his life, Washington was subject to periods of despondency and took an unusual interest in his own illnesses and those of others. This concern did not appear to be motivated by a fear of death, but rather by a fatalistic expectation of death as a consequence of even trivial disturbances. A recurrent preoccupation with death throughout a person's lifetime is certainly not a healthy state of mind, and in this instance it emphasizes the readiness with which periods of depression overtook Washington. It has been suggested that his frustration in love may have influenced his mental attitude toward life, and that his frequent conviction that death was imminent was an attempt at psychic compensation for his unsatisfied love. However, his tendency to morbid thoughts had already appeared when he was only nineteen years old, for he wrote to the father of a boyhood sweetheart: "I have recently been suffering from a violent pleurisy which has reduced me very low. . . ." Curiously enough, during his military campaigns, which were fraught with many perils and hardships, he exhibited a total disregard for hazards and indispositions, but in private life, illness and the anticipation of death became obsessions.

Washington's preoccupation with disease probably resulted very largely from his own frequent illnesses, but it may also have been a product of his unusual acquaintance with medical matters. Although in colonial days medicine was relatively young and limited, Washington had considerably greater medical knowledge than the average layman of his time. This knowledge undoubtedly served a practical purpose, for at Mount Vernon he was responsible for the welfare and efficiency of his many slaves. At various times Drs. James Loury and William Rumney of Alexandria were employed on a salary basis to care for the 200 or more slaves on his plantations. Washington also had many close friends who were physicians, and without question medical topics frequently were the subjects of discussion when he met these men informally and at various social functions. In Washington's diary are recorded the names of no less than sixty-seven physicians who visited him at Mount Vernon. Among his intimates were

the Drs. Shippen, father and son, John Morgan, Benjamin Rush, Thomas Cadwalader, John Redden and James Craik. A neighbor and friend, Dr. David Stuart, of Fairfax County, married the widow of Washington's stepson, John Parke Custis, and thus indirectly became a member of the Washington family. All of these men were physicians of the colonial and Revolutionary eras, and at least two of them—Dr. John Morgan and Dr. William Shippen—served Washington in a professional capacity during his various illnesses. Both of these men took part in the French and Indian War and the Revolutionary War, and later, in 1757, were the founders of the first medical school in America, Philadelphia College. This school later became the medical department of the University of Pennsylvania (1765).

Washington, in accordance with the tenets of his times, had great faith in the curative value of bloodletting. In February, 1760, at Williamson's Quarter, one of his plantations, he discovered that two of his negroes were sick, and without hesitation he directed that they be "bledded." In May of the same year, it is recorded in his diary, "lightning wch. had attended a good deal of Rain has struck my Quarter and near 10 negroes in it, some very bad, but with letting blood they recovered." Malaria was seasonally prevalent along the banks of the Potomac, James, and Rappahannock Rivers, where many of Washington's neighbors and friends lived, and he naturally developed a great faith in the value of quinine. Writing to his secretary, Colonel Tobias Lear, in August, 1798, he admonished: "If you have missed the ague, care and Bark* is necessary to prevent a relapse. . . ."

On another occasion, when he was concerned about malingering among his negroes, he expressed his philosophy of medicine in a letter to one of his plantation overseers:

"Nobody can be very sick without having a fever, nor will a fever or any other disorder continue long upon anyone without reducing them. Pain also, if it be such as to yield entirely to its force, week after week, will appear by its effects . . . the first stage of, and the whole progress through the disorders with which they (the slaves) might be seized (if more than a slight indisposition) should be closely watched, and timely applications and remedies administered; especially in pleurisies and all inflammatory disorders accompanied with pain, when a few days' neglect, or want of bleeding, might render the ailment incurable. In such cases sweeten'd teas, brothes and . . . sometimes, a little wine, may be necessary to nourish and restore the patient. . . ."

Washington believed strongly in the dietary causes of disease, and his own dental troubles, which will be discussed later, may have had some influence in strengthening his convictions along these lines. On one occasion he complained to Congress about "the lamentable mortality that attended us last Campaign." He attributed this to the soldiers' ". . . devouring large quantities of animal food, untemper'd by vegetables or vinegar, or by any kind of Drink but water, and eating indifferent Bread. . . . [To these habits] are to be ascribed the many putrid diseases incident to the Army. . . ."

Washington was greatly interested in the control of smallpox, which in those days frequently raged in epidemic fury and was attended by a tre-

*Chinchona bark, the source of quinine.

mendous mortality. During the winter of 1777, which was spent on the heights of Morristown, he had his entire detachment of men inoculated. General John Thomas, on the other hand, a violent antagonist of inoculation, saw his command ravaged by the disease, and finally lost his own life to it. Washington's advocacy of inoculation to prevent smallpox was a very important contribution to the public health of the United States. In his correspondence with Congress and the governors of several states during the Revolutionary period, he expressed many times his remarkably clear ideas concerning the communicability of the disease, the urgent need for isolation facilities, and the preventive effects of inoculation. In spite of his efforts, however, Washington's camp was what he called "a pest hole of disease, prostitution and complete demoralization." Most of the soldiers were in rags, and during those winter months he saw all about him "sickness, madness, starvation and attempted desertion."

One common medical misconception of the colonial era was the belief that the majority of abdominal conditions resulted from intestinal worms. In a letter written to Mrs. Tobias Lear, the wife of Washington's secretary, Mrs. Washington probably expressed her husband's views on this subject:

"I am sorry to hear by your Letter . . . that your little girl has been so ill. . . . I have not a doubt but worms is the principle cause of her complaints. Children that eat everything as they like and feed as heartily as yours does must be full of worms."

In spite of his extensive acquaintance with reputable physicians, the records indicate that Washington occasionally consulted quacks. His expense account for October, 1797, reveals an entry to the effect that he had paid an employee, Christopher, \$25 for a visit to a German hex and herb doctor in Lebanon, Pennsylvania, to obtain a remedy for hydrophobia. In his diary on February 16, 1769, he wrote: "Joshua Evans, who came here last Night, put an Iron Ring upon Patsy [Mrs. Washington's daughter] (for Fits) and went away after Breakfast." Two years later another method of treatment was attempted, and in his diary it is recorded: "Mr. Jon Johnson who has a nostrum for Fits came here in the afternoon." Later, the quack received 14 pounds for his visits.

The medicine chest at Mount Vernon was stocked with the usual remedies of the day, which included mustard, cinchona bark (quinine), camphor, sulfur, antimony, cream of tarter, Glauber salts, calomel, rhubarb, and jalop. Of these medicines, probably only quinine, the tried and true weapon against malaria, would be regarded by physicians today as having any unequivocal therapeutic value. Nevertheless, it was upon remedies of this type which Washington had to depend in many of his bouts with disease.

The first of Washington's illnesses of which we have records in any detail occurred in 1751, when Washington was nineteen. Washington had set sail for Barbados accompanying his half-brother, Lawrence, who was seriously ill with tuberculosis, and who hoped to benefit by "the radiant air of those summer isles." They embarked from the Potomac River on September 28, and after a very rough journey reached their destination, where the visitors

were hospitably received by the homesick colonists. Young George was invited to dinner in a home in which a member of the household was ill with smallpox, and rather than offend his friends by refusing the invitation, he accepted it and in due time contracted the disease himself. On November 17 he was "strongly attacked with the smallpox, sent for Dr. Lanahan whose attendance was very constant 'till my recover, and going out which was not 'till Thursday on the 12th of December'." He thereafter carried pits in his face, but Parson Weems, whose account of Washington was published in 1809 and who knew him personally, remarked that the disease had "marked him rather agreeably than otherwise." Shortly after his return home from Barbados, Washington suffered an attack of pleurisy, but from this disease too, he seems to have made a complete recovery.

In 1753, at the age of twenty-one, Washington was given his first command under General Braddock in the Wilderness Campaign against the French forces at Fort Duquesne. This was an ill-planned expedition, fraught with many perils and hardships, and resulted in Braddock's fatal wounds and crushing defeat. Washington became ill on this march, suffering from some infectious disease of uncertain nature that was accompanied by chills, fever, and great prostration. The communicability of the disease is suggested by the recorded statement, "his servant, poor John Alton, fell ill at the same time and recovered at the same time." Washington's diary indicates his reluctance to accept the inevitable incapacity caused by his illness:

"At this camp I was left by the Doctor's advice, and the General's [Braddock's] absolute orders, as I have already mentioned, without which I should not have been prevailed upon to remain behind, as I then imagined, and now believe, I shall find it no easy matter to join my own corps again, which is twenty-five miles advanced before us. Notwithstanding, I had the General's word of honor, pledged in the most solemn manner, that I should be brought up before he arrived at Fort Duquesne."

Four days after the march, Washington was

"seized with violent fevers and pains in my head which continued for nine days without intermission 'till the 23rd following, when I was relieved by the General's absolutely ordering the physicians to give me Dr. James powders† (one of the most excellent medicines in the world), for it gave me immediate ease, and removed my fevers and other complaints in four days' time. My illness was so violent to suffer me to ride; therefore, I was indebted to a covered wagon for some of my transportation; but even in this I could not continue far, for jolting was so great, that I was left upon the road with a guard, and necessaries to await the arrival of Colonel Dunbar's detachment, which was two days' March behind us, the General giving me his word of honor, that I should be brought up, before he reached the French fort. This promise, and the doctor's threats, that if I persevered in my attempts to get on, in the condition I was, my life would be endangered, determined me to hault for the above detachment."

Either Dr. James' powder or Washington's own resistive powers did their work, for Washington evidently recovered not long after this enforced rest.

†These powders contained one part antimony oxide and two parts calcium phosphate, and were used to induce perspiration.

Several years later, while he was still on the frontier, Washington became ill with dysentery accompanied by fever, and was compelled to leave the army and proceed to Mount Vernon for rest and treatment. Some months later he still suffered from his illness, as he complained, "in spite of all efforts of the sons of Aesculapius. . . . At certain periods, I have been reduced to great extremity and have much reason to apprehend an approaching decay with several symptoms of such a disease."

At this time, about 1757, there was much unrest in the country, both among the troops and the civil population. Innumerable humiliations and false accusations were devised and directed against Washington by those wishing to displace him. He became so disturbed and depressed that he began to suffer from a persecution complex, and believed that his best friends were traitors to him. This state of frenzy aggravated his recurrent dysentery and resulted in a progressive failure of health. He entered into futile correspondence with Governor Dinwiddie of Virginia in which he complained about derogatory remarks concerning himself that he believed had been uttered by various officers of the military forces. To these letters he received a polite but stern rebuff.

Washington finally became too ill to carry on this correspondence. On November 9, 1757, Washington's friend, Captain Stuart, wrote to Dinwiddie from Fort Loudon:

"For upwards of three Months past Colo. Washington has labour'd under a Bloody Flux, about a week ago his disorder greatly increas'd attended with bad Fevers, the day before yesterday he was seiz'd with Stitches and violent Pleuretick Pains upon which the Doct'r Bled him and yesterday he twice repeated the same operation. This complication of Disorders greatly perplexes the Doct'r as what is good for him in one respect hurts him in another, the Doct'r has strongly recommended his immediately changing his air and going some place where he can be kept quiet (a thing impossible here) being the best chance that now remains for his Recovery. The Colo. objected to following this Advice before he could procure y'r Liberty but the Doct'r gave him such reasons as convinced him it might then be too late and he has at length with reluctance agreed to it, therefore, has Directed me to acquaint y'r Hon'r (as he is not in condition to write himself) of his resolutions of leaving this immediately."

Dinwiddie, although he also was seriously ill at this time, answered promptly:

"This violent Complaint Colo. Washington labors under gives me great concern, it was unknown to me or he shou'd have had Leave of Absence sooner, and I am very glad he did not delay following the Doctor's Advice, to try a change of air, I sincerely wish him a speedy Recovery."

Although Washington at this time was only twenty-five, his many friends were gravely concerned about his failing health. They earnestly pleaded that he should not attempt a new campaign. George Mason warned him, "You will probably bring on a relapse, and render yourself incapable of serving the public at a time when there may be the utmost occasion. There is nothing more certain than that a gentleman of your station owes the care of his health and his life not only to himself and his friends, but to his

country." Soon afterward Governor Dinwiddie, still ill, departed for England, where before long he died. Washington, who was so ill that his physician, Dr. James Craik, had ordered him home, had nevertheless set out for Williamsburg; but, as he wrote to Dinwiddie's temporary successor, Blair, "I was unable to proceed, my fever and pain increasing upon me to a high degree, and the physicians assured me, that I might endanger my life by prosecuting the journey." Washington was still ill the next year, and again determined to go to Williamsburg, this time to seek expert medical advice. He was able to complete the trip this time, and it was on this occasion that he met and became engaged to his future wife.

In 1761 Washington again was laid low with recurrent "agues," fever, and disturbed sleep. This illness was undoubtedly malaria, which had become prevalent in the vicinity of Mount Vernon. His condition improved, but a relapse caused him to become despondent, and at the advice of his friend, the Reverend Dr. Charles Green, rector of Pohick Church, where Washington was a vestryman, he went to Warm Springs for a rest and change.

In 1768, at the age of thirty-six, Washington suffered a recurrence of dysentery. He recorded the stages of this illness in his diary.

"March 3—Returned home much disordered by griping and violent straining."

"March 4—At home with above complaint; sent for Dr. Rumney, who came in the afternoon."

"March 5—Very bad, the doctor staying with me."

"March 6—Somewhat better. Doctor staying with me and Mr. Ramsey stayed to dinner."

After confinement at home for about a week he indicated his recovery by the following entry:

"March 14—Hunting with Captain Posey and Lund Washington, started and caught a fox in about three hours."

Such an extensive record of illness during young manhood and early middle age would be enough to discourage any man, and Washington's pessimism as to the state of his health and recurrent anticipation of death, though undoubtedly exaggerated, are easily understandable. His gloomy thoughts were again apparent when in 1782, at the age of fifty, he wrote to Lafayette: "I have asked myself as our carriages separate whether that was the last sight I would ever have of you, and, though I wanted to answer no, my fears answer yes." Luckily for both himself and his country, however, Washington had again underestimated his own powers of survival.

During Washington's temporary retirement at Mount Vernon at the close of the Revolutionary War, he recorded in his diary in September, 1786, the fact that he had experienced attacks of ague and fever which were relieved by Dr. Craik's administration of bark. This illness was unquestionably another attack of malaria. On September 2, he made the following significant entry:

"Kept close to the house all day; being my fit day in course, at least any exposure might bring it on. Happily missed it."

One year later he suffered considerably from a rheumatic condition. In a letter to a friend he commented that his rheumatism had been so bad for the past six months that it was only with great difficulty that he could raise his hands above his head or turn himself in bed. Washington apparently made a complete recovery from this disturbance, for no subsequent mention of rheumatism was made. For this reason it seems probable that the condition was restricted to a self-limited involvement of the shoulder joints, such as would result from bursitis or periarthritis.

It was during this period that Washington and the other great statesmen of the country were struggling to make real their dreams of a united nation. They had fought for and won independence from England, but they had yet to prove that America could govern herself. After much bitter quarreling, a constitution was finally drawn up and by the fall of 1788, when the first elections of the United States were held, all but two of the states had accepted it. Popular opinion was overwhelmingly in favor of Washington for the post of president, and on April 30, 1789, having recovered from a mild attack of pneumonia during the previous winter, he took the oath of office at Federal Hall in New York City.

On Saturday, June 13, only six weeks after his inauguration, Washington was seized with violent pains in his thigh followed by chills and high fever. Dr. Samuel Bard, Jr., of New York, an eminent physician of the post-Revolutionary era, was called immediately. Dr. Bard elicited from his patient a résumé of his previous medical history, and learned that Washington had subjected himself to considerable exposure and strain, especially during his military campaign. He had found it necessary to wear glasses for eleven years—evidently since the onset of presbyopia, the change toward limited accommodation for reading that occurs in middle age—and had been using a primitive type of bifocal lens, perhaps one of the kind invented by Benjamin Franklin in 1784. His sandy hair was losing its color, and he referred to himself as becoming blind, deaf, and gray. Since he had no history of middle ear infection, his deafness was probably of the senile nerve type, another frequent concomitant of advancing age. He had had constant trouble with his teeth, and a majority of them had already been extracted by himself.

After a thorough examination, Dr. Bard made a diagnosis of carbuncle of the thigh, and advised immediate operation. With the aid of his father, Dr. Samuel Bard, Sr., he operated on Washington on Wednesday, June 17, 1789, in the Walter Franklin home on Cherry Street, New York City. No anesthetic was used, and Washington was forced to endure terrible torture, especially since the inflammation proved to be deeper and much more extensive than had been anticipated. The wound was left wide open and local remedies applied. On the fifth postoperative day, notes show that the fever had subsided, but the tumor mass was still very large and "it will be some time before he will be wholly relieved from the inconvenience of it." On the sixteenth postoperative day, Washington wrote to a friend that "my health is restored, but a feebleness still hangs upon me, and I am yet much

inconvenienced by the incision which was made in a very large and painful tumor on the protuberance of my thigh; this prevents me from walking or sitting." Six weeks after the operation he was able to sit in a chair and ride in a specially built carriage. Complications soon set in, however, first with the development of a severe conjunctivitis, and then with frequent colds, one of which terminated in pneumonia which took an unusually heavy toll on Washington's strength. Complete recovery took 109 days and during this entire time Dr. Bard and his father were in constant attendance. It is interesting to note that Tobias Lear, Washington's secretary, paid for services rendered a final bill of 59 pounds, 3 shillings to Dr. Bard, Jr., and 25 pounds to Dr. Bard, Sr. This could not be considered excessive for the responsibility of caring for the President of the United States.

In 1790, not long after the Federal government was moved from New York to Philadelphia, Washington again became ill with pneumonia. The strain of public life and other demands on his energy had proved very arduous, and this attack was more severe than the previous ones. He wrote:

"I have already within less than a year had two severe attacks, the last worse than the first, a third, more probably, will put me to sleep with my fathers. At what distance this will be I know not. . . . I am thankful that I am so well recovered, though I still feel the remains of the violent affection of the lungs, the cough, the pain in my breast, shortness of breath, not having entirely left me."

On June 3, during his convalescence, he wrote to Lafayette:

"I have a few days since had a severe attack, the peri-pneumony kind, but am now recovered except in point of strength. My physicians advise to more exercise and less application of business. I cannot, however, avoid persuading myself that it is essential to accomplish whatever I have, though reluctantly, undertaken to the best of my abilities. But it is thought Congress will have a recess this summer, in which case, I propose going for a while to Mount Vernon."

After his recovery from this illness and after Congress had recessed, Washington went with Thomas Jefferson, his Secretary of State, to Newport, Rhode Island, on August 15. This community was then popular as a health resort, and Rhode Island had just been officially admitted to the Union. From Newport, Jefferson wrote in a letter to James Madison, "The President is not well; little lingering fevers have been hanging about him for a week or ten days and affecting his look most remarkably."

From that time on Washington never fully regained his health. The demands made upon him during his two terms as president were heavy, and he continued to suffer from periodical attacks of fever. On August 30, 1793, he wrote in his diary: "No account of the weather, etc., kept from hence to the end on account of a sickness commenced with fever on the 19th and lasted until the 24th, which left me debilitated." In the same year he tardily replied to a letter received from an acquaintance: ". . . debilitated health occasioned by the fever, which deprived me of 20 pounds of weight, I had when you and I were at Troy Mills Scales, rendering writing irksome."

Time, as well as these infectious diseases, had begun to make its claims against Washington's health. He had been obliged to wear glasses since the

age of forty-six, and in 1783, when he was fifty-one, he remarked that he had grown almost blind as well as gray in the service of his country. This pessimistic statement was obviously an exaggeration, however, for Washington continued to be able to read until his death. His dental troubles were more extensive. Throughout the greater portion of his life, Washington was afflicted with dental disease. As early as the age of twenty-eight he had some defective teeth, and one tooth had already been extracted six years earlier. Each attack of toothache was usually followed by the extraction of the offending tooth, and this procedure became almost a yearly occurrence for Washington. His diary is full of such entries as, "indisposed with an aching tooth," or "swelled and inflamed gum," or "to Dr. Watson drawing a tooth 5/."

During most of these years he consulted an itinerant surgeon dentist named John Baker. By 1789, when he was fifty-seven years old, he was toothless and was obliged to resort to the use of artificial dentures. There is a popular story that Washington's first dentures were made by Paul Revere, but this is extremely doubtful. A more reliable source states that they were made by a French dentist who stained them with wine and used sealing wax for a base. In 1796, Dr. Greenwood of New York carved for him a set of teeth from the ivory of the "sea horse" or hippopotamus. These were somewhat better fitted than the original set, but they distorted his face and were extremely uncomfortable. David Ackerson wrote: "I saw [Washington] in Alexandria a year before he died. His hair was gray and his form slightly bent. He had false teeth, which did not fit and pushed his under lip outward."

In the most familiar portrait of Washington, Gilbert Stuart's Athenaeum head, which was painted when Washington was sixty-four, the facial distortion caused by his false teeth is very noticeable. The dimension from the nose to the chin is too short, and since the lips were padded with cotton, the concave contour of the lower lip is lost and the so-called ape chin of patients who do not have adequate dentures is strikingly revealed. This portrait, which is commonly displayed in schoolrooms and is reproduced on postage stamps, was so unlike Washington that his family refused to accept it, and Stuart's widow, years later, sold it to the Athenaeum Society of Boston. It is now in the possession of the Museum of Fine Arts in Boston.

Washington's dentures caused him great difficulty and annoyance in the chewing of his food, and he often cursed his plight. This handicap undoubtedly forced him to give up many of the favorite dishes of the day, and perhaps accounted for the simple diet he was believed to have followed, and for some of his ideas concerning food. He often complained of digestive disturbances which may have resulted from imperfect mastication. At any rate, he knew the rules of good eating, whether or not he was able to follow them, for among his famous Rules of Civility are the following dicta: "Be not angry at table, whatever happens . . . for good humor makes one dish of meat a feast . . . Feed not with greediness. . . Put not another bite into your mouth until the former has been swallowed."

As the years went on, Washington's hearing also became impaired, and in 1793 Maclay stated that he believed the president heard only a small part of the conversations in which he engaged. This development may have been related to Washington's dental troubles, for his deafness has been attributed, in part at least, to excessive closing of the bite, which caused encroachment of the lower jaw on the external opening of the ear. Before long, old age marked Washington with another of its signs—a tremor of his hands which came to be clearly reflected in his handwriting. About this time he also became the victim of severe recurrent headaches. On his retirement from the presidency, Washington wrote to General Knox in March, 1797: "The remainder of my life (which in the course of nature cannot be long) will be occupied in rural amusements." This time his feeling that death was not far off was all too justified.

✓ Washington's fatal illness began on Friday, December 13, 1799, and later was the subject of a bitter controversy. There was disagreement not only on the question of diagnosis, but also on the manner of treatment. ✓ It was, and still is, thought possible that a different course of treatment would have saved Washington's life. It must be remembered, however, that the realm of medical science in those days was a limited one. Medical knowledge was inadequate, diagnostic procedures were few, and the therapeutic armamentarium was very meager and to a large extent dependent upon trial and error. In any case, it is impossible to doubt that the physicians who attended Washington did the best they knew in their attempts to save him.

In Washington's diary on December 12 is recorded this entry, "Morning cloudy, wind at northeast and mercury at 33. A large circle around the moon last night. About ten o'clock it began to snow, soon after hail and then a settled rain. Mercury at 28 at night." He chose this disagreeable day to make the rounds of his plantations, riding from ten o'clock in the morning until three o'clock in the afternoon. His faithful secretary and friend, Colonel Tobias Lear, stated that on Washington's return home he noted "that his neck appeared wet and that snow was hanging upon his hair." He came to dinner without changing his clothes. The next morning, Friday, Washington did not go out as usual, for he had taken cold and complained of a severe sore throat. The entry in his diary on this day read, "Morning snowing and about three inches deep, wind at northeast and mercury at 30. Continued snowing until about one o'clock and about four o'clock it became perfectly clear. Wind at same place not hard. Mercury 28 at night."

In spite of his not feeling well, Washington went out in the cold for a short time in the afternoon to mark certain trees which were to be cut. Upon returning to the house he had a "hoarseness which increased in the evening, but he made light of it." He spent the evening reading the newspapers, and when he found anything of unusual interest, read it aloud as well as his hoarseness would permit. When Washington retired to bed, Colonel Lear suggested that he take something for his cold, but Washington

replied, "No, you know I never take anything for a cold. Let it go as it came."

Early Saturday morning, December 14, at three o'clock, he awakened Mrs. Washington, stating that he was very ill and had suffered an ague. She wished to arise and summon assistance, but Washington would not permit this, fearing that she, too, would become ill if she ventured forth into the cold room. At daybreak Colonel Lear came and found Washington breathing with difficulty, hardly able to utter an intelligible word. A mixture of molasses, vinegar, and butter was given to him, but he could not swallow it, and during this attempt "he appeared to be distressed, convulsive and almost suffocated." Washington then requested that Rawlins, one of his overseers, be summoned to bleed him. One pint of blood was withdrawn, without benefit, however. Lear then applied sal volatile[‡] gently to his throat. Washington objected, complaining that his throat was very sore. A piece of flannel dipped in this solution was next placed around his neck, and his feet were bathed in warm water, all without benefit. At about eight o'clock that morning Washington left his bed for about two hours, but obtained no relief from the change of position.

His physician, Dr. James Craik, had been summoned and arrived shortly after nine o'clock. Washington and Craik were intimate friends, their friendship having endured through many years of close contact. Washington once said, "If I should ever have occasion for a physician or surgeon, I should prefer my old surgeon, Dr. Craik, who from forty years experience, is better qualified than a dozen of them put together." Dr. Craik was surgeon to the Virginia Provincial Regiment, at one time commanded by Washington, and it was in the campaign against the French and Indians at the headwaters of the Ohio River that the long and enduring comradeship between the two men originated. It was Dr. Craik who relieved Washington of his fever during this campaign by administering James Powders. A year later, Dr. Craik treated the fatal wounds of General Braddock, sustained in the latter's futile attempt to capture Fort Duquesne. It was Dr. Craik, too, who warned Washington of the intrigue which culminated in the famous Conway Cabal, when the attempt was made to install Gates as commander-in-chief of the Army. It was this same physician who attended General Mercer at the Battle of Princeton, dressed the wounds of Lafayette at Brandywine, and was in command of the medical branch of the army in the final campaign at Yorktown. In his will Washington bequeathed "to my compatriot in arms and old and intimate friend, Doct'r Craik . . . my Bureau . . . and the circular chair, an appendage of my study."

When Dr. Craik arrived at Washington's bedside, he applied a blister of cantharides (a preparation of dried beetles) to Washington's neck, drew more blood, and prescribed vinegar and sage tea to be gargled. This caused the patient so much discomfort that he nearly suffocated. The failure of Washington's condition to improve under the treatment and the obvious seriousness of the disease prompted Dr. Craik to call for a medical consultation, and accordingly, Drs. Gustavus Richard Brown, of Port Tobacco,

[‡]Ammonia carbonas or Hartshorn ammonia.

Maryland, and Elisha Cullen Dick,** of Alexandria, Virginia, were summoned. Dr. Craik again bled Washington at eleven o'clock. In spite of this treatment, the difficult breathing and swallowing continued.

Dr. Dick, the first of the two consultants to arrive, reached Mount Vernon at about three o'clock in the afternoon, and Dr. Brown, whose journey was longer and more arduous, arrived about an hour later. Washington was then bled for the fourth time in less than twelve hours, and it was noted that the blood came "slow and thick," but there was no fainting. Calomel and tartar were administered without improvement in the patient's condition. At about half past four o'clock Washington gave directions concerning his will, and at five o'clock attempted to sit up, although he was able to do so for only about half an hour. He appeared to be in great distress because of his difficulty in breathing, and he frequently shifted his position in bed. At about eight o'clock in the evening the physicians applied blisters and cataplasma (poultices) of wheat bran to his feet and legs.

At this time, Washington uttered his last word: "I die hard, but I am not afraid to go. I feel myself going. I thank you for your attentions; but I pray you take no more trouble about me. Let me go off quietly. I cannot last long."

His condition became progressively worse, and although for a time his breathing became less labored, he expired shortly afterward, between ten and eleven o'clock on December 14, 1799.

Fully aware of the great responsibility vested in them in the care of Washington during his final illness, and anticipating criticism from other members of their profession and the public at the fatal outcome of the illness, the three physicians held a conference before they parted company on that sad night. It appeared that they were not in accord as to the nature of the disease or the treatment which was or should have been employed. Dr. Craik was sixty-eight years old; Dr. Brown was fifty-one, and Dr. Dick, forty-nine. This disparity in age probably gave Dr. Craik primary authority in approving or rejecting therapeutic suggestions. Dr. Dick later stated in a letter that he had urged that the "trachea be perforated," but that Dr. Brown had emphatically opposed the procedure. They finally agreed on "cynanche trachealis" as the cause of death. This term is not familiar to the physician or layman of today, but in postcolonial days it referred to an inflammation of the glottis, larynx, or upper part of the trachea. It was introduced into medicine by Dr. William Cullen, professor of medicine at Edinburgh. Since many physicians of the colonial and Revolutionary periods were educated at the University of Edinburgh, there being then no recognized medical school in this country, it was probably through this channel that the term became known in America.

Dr. Craik and Dick considered it advisable to give the public complete information about Washington's final illness and death. They, therefore, submitted a statement to the *Times* of Alexandria, Virginia, on December 19, 1799, and at their request it was later reprinted in the *Medical Repository*.

**Prosector of Dr. Nathaniel Chapman (1780-1853), who founded in 1820 what is now the *American Journal of the Medical Sciences*.

For a time the nation was bowed in grief at Washington's sudden and unexpected death, but soon a reaction of bitter criticism, directed against the attending physicians, set in. One of Washington's biographers later went so far as to say, "There can scarcely be a doubt that the treatment of his last illness by the doctors was little less than murder."

Shortly after Washington's death a Dr. John Brickell, a resident of Savannah, Georgia, wrote a very interesting letter in which he expressed his own views concerning the merits of the medical treatment given Washington. This document remained unnoticed for over a hundred years until it was discovered by Dr. Ward Brinton and published in 1903. By that time certain words had become undecipherable, but Dr. Brinton was able to supply their meanings and they are used in the reproduction of the letter which follows:

The life of this illustrious personage has been so eminently beneficial and instructive to the world that every man who has a just value for virtue, talent, or an attachment to civil liberty must lament his death. The loss to his country at this particular period is incalculable; it is irreparable. We shall never look upon his like again! I have perused the account published by his physicians of their medical treatment, and differ from them so entirely in my opinion of its propriety that, with all due respect for their good intentions, I think it my duty to point out what appears to me a most fatal error in their plan; and although it is not in the power of science to restore his precious life, yet a discussion of this case may be productive of benefit to mankind. I suppose myself addressing men of science whose minds are so highly cultivated as to comprehend my reasoning on this subject, which I shall make as short and clear as possible. When we examine the human blood by optical glasses, by chemistry and by experimental philosophy, we find it full of nourishment in young people, but effete and poor in the aged. When we examine by anatomical injections the state of the vascular systems we find innumerable ramifications in the arteries through which the blood flows freely in young people; while many of their anastomoses are obliterated in the aged. The blood of old people, therefore, being poorer and the channels for conveying its nourishment fewer is the reason that old people cannot bear bleeding as well as the young, it likewise explains (what every man of science and experience must know) why a small bleeding has the same effect on an aged person that a large bleeding has upon the young and robust. These observations, founded on well-established facts, demonstrate how guarded and circumspect we ought to be in the use of the lancet when our patient is far advanced in life, and how actively we ought to employ our thoughts in devising other methods than profuse bloodletting in such a case. From what the physicians have published and other documents, we have data sufficient to ascertain how far the maxims derivable from science, experience, and judgment have governed in the present instance. The duration of this illness was twenty-four hours,†† from 3 p.m. until after 10 p.m. A bleeder being sent for at the unusual hour of 3 a.m., we suppose the operation was not performed until 4 o'clock; before eleven hours elapsed he was bled again twice profusely, which must have been about eighteen ounces each time, and soon after he was bled again to the amount of thirty-two ounces. Thus we see by their own statement that they drew from a man in the sixty-ninth year‡‡ of his age the enormous quantity of eighty-two ounces, or above two quarts and a half of blood in thirteen hours.

Very few of the most robust young men in the world could survive such a loss of blood; but the body of an aged person must be so exhausted, and all his power so weakened by it as to make his death speedy and inevitable. There the effect followed

††From Washington's first uttered complaint until his death, approximately thirty-three hours elapsed.—AUTHOR.

‡‡This stated age is incorrect; it should read sixty-seventh year.—AUTHOR.

the cause precisely; the physicians soon observed the powers of life yielding—a loss of speech; and that he expired without a struggle (the excessive bleeding left him no strength to struggle). After what has been said it may be expected that I shall point out my plan. I will speak generally without discussion or try to criticize on the minor points of the treatment which, however, I do not admire . . . to have attacked the disease as near its seat as possible the vein under the tongue might have been opened; the tonsils might have been scarified; the scarification and cup might have been applied on or near the thyroid cartilage. One ounce of blood drawn in this way would relieve more than a quart drawn from the arm, and would not exhaust and enfeeble the body, in the same manner that an ounce of blood drawn at the temple relieves an inflamed eye more than a quart drawn from the arm. The neck might have been rubbed with warm laudanum and camphor and a bag of warm fine salt laid on; but the unreasonable application of a blister would prevent this. He ought to have been put into one, two, or three flannels; and instead of calomel, it would have been better to give him small draughts of hot whey, with a little laudanum, camphor, spiritus volatilis aromaticus, or spiritus nitri dulcis occasionally to remove the spasm which caused the dyspnoea, and produce perspiration, which would relieve swelling, by turning the course of the fluids toward the skin.

Savannah, 23d January, 1800

John Brickell

Modern medical practice would certainly agree with Dr. Brickell that the profuse bleeding to which Washington was subjected must have done him much more harm than good. However, the alternative treatments suggested by Dr. Brickell would probably have been little better.

It is interesting to note that although Dr. Brickell strongly disapproved of the therapeutic measures taken by Washington's physicians, he does not appear to have attempted to make his own diagnosis of the disease. Since his day, however, many historians and medical writers have speculated upon the true nature of this fatal illness. It has been held by some that the disease was laryngitis, a conclusion drawn from the extreme hoarseness suffered by Washington. This explanation is obviously inadequate, however, since laryngitis is not a fatal disease. Quinsy has been considered, but this appears improbable because of the remarkably short course of the illness, only about thirty-three hours elapsing between Washington's first complaint—soreness of the throat on the morning of December 13—and his death between ten and eleven o'clock on the night of December 14. It would be extraordinary for quinsy to cause death so rapidly. Several authors have gone to great lengths in an attempt to prove that laryngeal diphtheria was the cause of Washington's death. This supposition also appears untenable, for Washington was said to have suffered from "black canker" in his youth, a term then employed to designate diphtheria; and one such attack would have rendered him immune to any subsequent diphtheritic infection. Furthermore, it is unusual for diphtheria to attack a person sixty-seven years old, and no record exists of similar illness in the vicinity of Mount Vernon at the time.

Other suggestions as to the nature of Washington's final illness have included Vincent's angina, Ludwig's angina, acute inflammatory edema of the throat, and cardiovascular renal disease. In the light of modern medical knowledge, however, we can today state with certainty that the cause of

Washington's death was acute streptococcal pharyngitis ("strep-throat") complicated by edema of the larynx.

In the final analysis, it becomes evident that Washington was possessed of a biologic superiority which repeatedly enabled him to recover from serious illnesses, notably infectious diseases—and this in spite of, rather than because of, medical treatment. With the single exception of the use of quinine in the treatment of his recurrent episodes of malaria, no remedy employed during his various illnesses can be said to have been specific, or even conceivably to have swung the balance toward the side of recovery.

Today many of the infections to which Washington was exposed—diphtheria, smallpox, dysentery (probably bacillary), and malaria—are preventable, but in colonial days they were constant hazards and accounted in a large measure for the high mortality rates of that era. Yet, in spite of this prevalence of disease, the inadequate medical knowledge of the time, and his own apparent susceptibility to infections, Washington lived to the age of sixty-seven, exceeding even the optimal life expectancy of today. He was undoubtedly a man possessed of great vigor and reserve energy, without which it would have been impossible for him to have engaged actively in the countless issues of his time and to have withstood the devastating effects of great responsibility and criticism.

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John Adams

1735-1826

JOHN Adams, the second of the Presidents, was destined to a long life and a relatively healthy one. Unlike Washington, he escaped most of the infectious diseases of his time, possibly because he was not a military man and therefore not exposed to the debilitations of army life. More a student than a man of action, Adams lived a fundamentally peaceful life; and when he died at the age of ninety, he set a record for presidential longevity that has not yet been equaled.

Adams, the son of John Adams and Susanna Boylston, was born in Braintree, Massachusetts, on October 19, 1735. This little town, later called Quincy, was about ten miles south of Boston on the bay. As a youngster he is said to have had a round, unemotional face with rosy cheeks, and during his boyhood he spent many hours roaming the woods and fishing in the numerous trout streams in the vicinity of his home. He was considered very nervous, however, and Adams himself later commented upon his "morbid irritability of nerves."

In 1764, when he was twenty-nine, Adams married Abigail Smith. Their marriage was a happy one, eminently successful from every standpoint. They had one daughter and three sons, one of whom was to follow his father's footsteps to the presidency.

From the age of twenty-five on, Adams' eyes were weak, although his sight was very good until the last years of his life. Since there is no indication that he suffered from an organic eye disease, it seems probable that this weakness was an uncorrected hyperopia, or far-sightedness. He had frequent headaches, and his eyes watered a good deal and were very red. Adams himself attributed this condition to ten years of almost constant reading. It was his misfortune that plus spheres were not available in his time.

Adams' first serious illness of which there is any record occurred in 1770 when he was thirty-five years old. He suffered from chills and fever and a severe pain in his chest, but no cough. Without a more detailed description of symptoms it is impossible now to judge whether this illness was an intercostal neuralgia, pleurisy, or possibly pneumonia. He was also very nervous and despondent at this time. When well enough, he rode on horseback to a medicinal spring in Connecticut to recuperate. For several years after that, horseback riding remained his chief recreation. Eventually he regained good health, although he liked to consider himself "an infirm man."

In the summer of 1775, Adams was called home from Washington because of an epidemic of dysentery in the neighborhood of Boston. His wife and

three of his children became seriously ill, but all recovered. About this time, in his fortieth year, Adams had an inflammation of his eyes that was so severe that he could neither read nor write. The severity of this attack and its two months' duration suggest an iridocyclitis, but a conclusive diagnosis cannot be made. Another symptom which appeared at this time and lasted throughout the remainder of his life was a tremor of his hands. It became very noticeable and made writing an exceedingly difficult task. Adams called it a "quivering of the hands," and it seems to have been a manifestation of Parkinson's disease. One year later, he complained bitterly of the extremely hot weather at the Capitol and even went so far as to suggest that each state should increase their representatives in Congress so that members could take turns attending Congress and staying home.

In November, 1777, Adams was appointed a delegate to a conference in France, and on February 13, 1778, in the midst of the Revolutionary War, he set sail in the frigate *Boston*, accompanied by his young son, John Quincy Adams. When five days out, they were met by three English frigates, but they outsailed all but one. This one also was lost sight of during a severe storm that night. Just one month later, another English ship hove into sight, and a battle was inevitable. In the thick of the fight, Captain Tucker saw Adams on deck with a musket in his hand, fighting like the rest of the marines. On Adams' refusal to leave the scene of battle, the captain forcibly carried him to his quarters below deck, and Adams' first and last military engagement came to an abrupt end.

In January, 1783, Adams was sent on another diplomatic mission to France, this time to be present at the signing of the treaty with England that ended the American Revolution. Shortly afterward, while Adams was still in Paris, his health broke down completely. He was staying at the Hotel du Roi and was taken care of by a physician, Sir James Jay. He had a high temperature, pain throughout his body, and was unable to sleep. This influenzal attack left him much debilitated, and convalescence took many months. He remained in Paris, feeble, emaciated, and very languid for eight months after his initial illness. Finally, on the advice of his physician, he left for England to drink the waters of Bath. Apparently this remedy was not too effective, for Adams states in his diary that he did not consider himself completely recovered until 1788, when he was fifty-three.

By this time, Adams was well into middle age, and although he was rather short in stature—his height being somewhere between 5 feet 5 inches and 5 feet 7 inches—he was vigorous, florid, and quite fleshy. When Adams was in the presence of George Washington, the contrast in physique between the two men was marked; but if Washington was notable for his size, Adams was distinguished by his bald head. Temperamentally, Adams was not as suited for leadership as Washington was. His chief faults were his vanity, loquacity, stubbornness, and high-strung nervousness. In general, his temper was tranquil until met by ingratitude, hypocrisy, or treachery. When aroused, his temper was extremely violent but usually of short duration.

Adams was a light drinker for seventy years, although his moderation

seemed chiefly to be a result of the fact that liquor did not agree with his stomach. This suggests the possibility of a duodenal ulcer, but there is no further evidence on this point. He chewed or smoked tobacco almost incessantly. Thus, even in personal habits, Adams and Washington are a study in contrast: Adams used tobacco in excess but drank little, while Washington drank heavily—though he carried it very well—but didn't care for tobacco. Apparently this difference was one of physical tolerance and had no moral implications, despite Calvin Coolidge's description of Adams as "the soul of Puritan idealism."

Adams survived his two terms as Vice President under Washington and his four years as President—the total period of his offices extending from 1789 to 1801—apparently without physical ill effects. It was not until he was eighty-five years old and had long since retired to his Massachusetts home, that Adams' physical frame, strong as it had been, began to take on senile changes. Even then, his mind still worked with vigor when the occasion demanded. During this period Adams commented on the fact that what he most disliked was the mere vegetation of extreme age, and rather than fall into it he would cheerfully listen to any book, however trifling, that might at the moment be attracting the fancy of younger generations. His avidity for new literature was so well known that he seldom lacked a supply of reading matter provided by his many kind friends in the neighboring city of Boston. His days were varied by a ride taken daily in fine weather around the vicinity, in the scenery of which he had always delighted. In this way he obtained exercise after walking had become too fatiguing to his still heavy frame. Another diversion consisted of conversation with friends and visitors who came to call upon him. Thus the remnant of his life and strength ebbed away, gently and insensibly, in the way that Cicero so happily describes: "*Semper enim in his studiis laboribusque viventi non intelligitur quando obrepatur senectus. Ita sensim sine sensu aetas senescit. Nec subito frangitur, sed diuturnitate extinguitur.*"

During the spring of 1826, when Adams was ninety years old, a very definite decline in his physical powers took place. He became bedridden and was under the constant care of physicians and his daughter-in-law, Mrs. Clark. Bilateral senile cataracts dimmed his sight so that he could no longer read, and his hearing became greatly impaired from senile nerve deafness. Nevertheless, he still became so much interested in current affairs and activities that he fully employed the members of his immediate family in reading to him and writing to his dictation.

On June 30, 1826, Adams' symptoms of debility became more alarming every moment. There was no suffering, except for labored respiration from a hypostatic terminal pneumonia, but this increased so steadily that early in the morning of July 4, 1826, the physician in charge, Dr. Holbrook, predicted that his patient could not last until evening. At five o'clock in the afternoon of that Independence day, John Adams quietly died. The cause of death was a gradual heart failure from arteriosclerosis (hardening of the arteries), in which the coronary artery was involved, and a terminal

hypostatic pneumonia. It was a peaceful end to a long life that may still be envied today as a model of conscientious public service and personal contentment.

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Thomas Jefferson

1743-1826

IN his relation to medicine and medical history, Thomas Jefferson is of interest more as a scholar and theorist than as a patient. An outstanding man in many fields, it seems probable that he might have been a great physician had not his country's need for him as a statesman been even greater. Even when sick himself, he seemed to assume the dual roles of patient and of objective clinical observer. His brilliant mind was attracted to medical research, and although he frequently expressed his skepticism as to the worth of the medicine of his day, he himself made several contributions to its progress.

Much of Jefferson's great interest in medical science is revealed in his voluminous correspondence with Dr. Benjamin Rush of Philadelphia, the man with whom William H. Harrison later studied medicine for a year. One of Jefferson's first investigations of a medical nature was his thorough study of the various natural hot springs that were situated in and near his home state of Virginia. His research included a chemical analysis of these springs, one of which proved to be very rich in sulphur and especially efficacious in the treatment of rheumatism. Jefferson's comments on the occasional occurrence of albinos among Virginia negroes were also noteworthy. His thorough knowledge of osteology, not only of the human body but of the fossil bones found in the salt licks and along the Ohio River, made him one of the American pioneers in this subject. His most extensive research and contribution to science, however, was in the field of botany and his work along this line became the basis of the pharmacology of his day. To medical education, too, Jefferson made a lasting contribution by establishing a chair of medicine at the University of Virginia. The course of study thus offered was purely theoretical and probably corresponded in general to our present-day premedical course, with clinical work being provided for in other ways.

Benjamin Waterhouse is generally given credit for the original introduction of vaccination for smallpox in America, along the lines laid down by Dr. Edward Jenner in England. Among the most active of his supporters was Thomas Jefferson. This fact was made known by the discovery of the letters which Waterhouse wrote to Jefferson and which were made public by Dr. Robert H. Halsey of New York. These letters are now preserved in the Library of Congress. Waterhouse had attempted to interest President John Adams in his proposals for vaccination, but Adams responded with sympathetic indifference. Like Jenner, however, Waterhouse was fanatically devoted to the cause of vaccination, and so he wrote to Thomas

Jefferson, then a candidate for the presidency. This letter was written on December 1, 1800, and Waterhouse enclosed a copy of his book, *A Prospect of Exterminating the Small-Pox*. Jefferson immediately replied as follows:

Washington, Dec. 25, 1800.

Sir:

I received last night, and have read with great satisfaction, your pamphlet on the subject of the kine-pock, and pray you to accept my thanks for the communication of it.

I had before attended to your publications on the subject in the newspapers, and took much interest in the result of the experiments you were making. Every friend of humanity must look with pleasure on this discovery, by which one more evil is withdrawn from the condition of man; and must contemplate the possibility, that future improvements and discoveries may still more and more lessen the catalogue of evils. In this line of proceeding you deserve well of your country; and I pray you accept my portion of the tribute due to you, and assurances of high consideration and respect, with which I am, Sir,

Your most obedient and humble servant,

THOMAS JEFFERSON

The correspondence thus initiated continued for several years, and during this time Waterhouse sent vaccine virus to Jefferson. Several of the first batches failed to take because the virus had lost its potency in transit, but on August 28, 1801, Waterhouse wrote to Jefferson expressing his relief and joy that Jefferson had at last received some active material. Jefferson had in turn sent some of the vaccine to Dr. Wardlaw who used it successfully at Monticello.

Jefferson, in true scientific fashion, proceeded to test the protective power of the cowpox by having the patients inoculated with smallpox. Having thus satisfied himself of its efficacy, he began to spread the knowledge and the virus through Virginia and other parts of the United States. It was from Jefferson that John Redman Coxe of Philadelphia received his first supply of vaccine and was able to initiate vaccination in Philadelphia. Finally, Jefferson was instrumental in beginning the practice of vaccination among the Indians. On April 8, 1802, while Jefferson was President, Waterhouse wrote in a letter to Jenner that "last December" an embassy of Indian tribes visited Washington. While they were there, Jefferson sent for the chief, Little Turtle, to whom he communicated the fact that the Great Spirit had recently made a gift to the white men in showing them how to preserve themselves from the smallpox. This he now wished to communicate to the Indians, and the chief asked that he be the first to be inoculated. The Rev. Dr. Grannt, chaplain of Congress, performed the operation on the chief and several of his warriors, and they were supplied with virus and a copy of directions which had been drawn up by Jenner and reprinted for American use.

But not only was "true vaccine virus planted," as Waterhouse put it, in Massachusetts, Virginia, and among the Indians; it was also spread to Maine, Vermont, Rhode Island, Connecticut, New York, South Carolina, Kentucky, Tennessee, and Georgia. Another interesting source of informa-

tion concerning the inoculation for smallpox is found in the *Virginia Almanac*, a copy of which is among the Jefferson manuscripts in the Library of Congress. According to the instructions for inoculation given there,

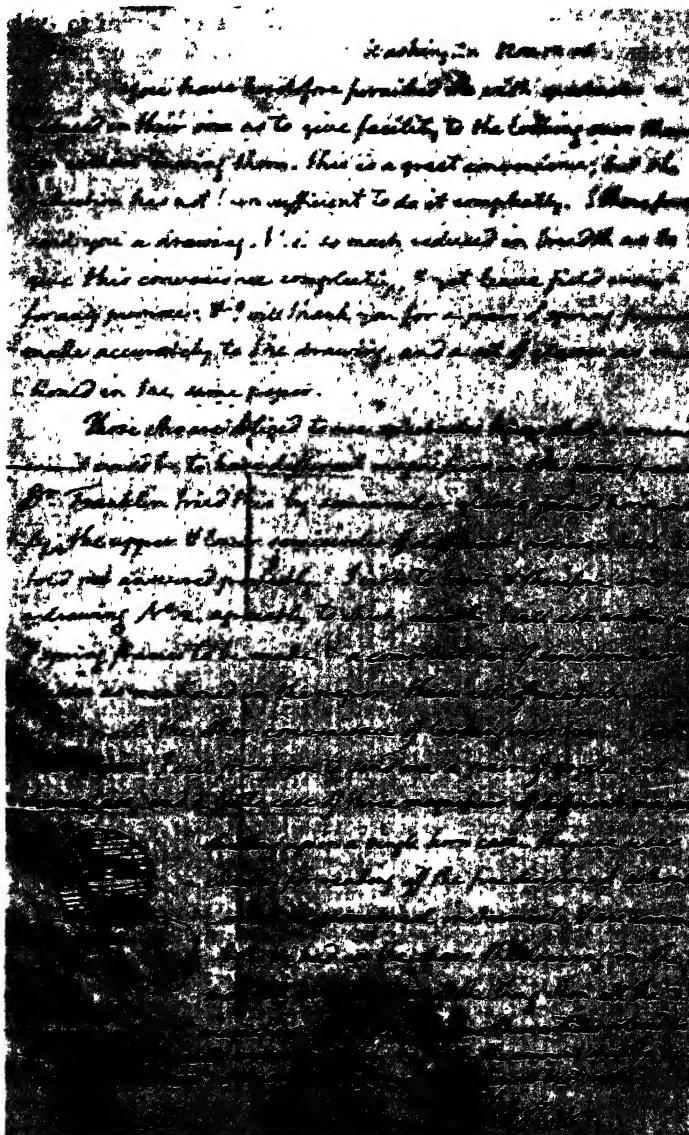


Fig. 1. Letter written by Jefferson to a Philadelphia physician, ordering two different types of eyeglasses, shown in Figure 2.

patient should first abstain from animal food, spices, and fermented liquors, "except small beer," for ten days. During this period he takes three doses

each of "8 gr. calomel, 8 gr. compound powder of crab's claws," and "1/8 gr. tartar emetic." The patient is then inoculated with no attempt at asepsis; in fact, the instructions specify that the wound should *not* be covered. The second day after inoculation he takes "3 gr. calomel, 3 gr. crab's claws," and "1/10 gr. tartar emetic." As soon as the vaccination begins to "take," he has the same dose again, "given overnight," and as a follow-up next morning, he takes "2 oz. infusion of senna, 1/2 oz. manna," and "2 dr. tincture of jalap."

Jefferson was also versed in the nature and epidemiology of yellow fever, which he called the "malignant fever." He originally recorded the fact that yellow fever was generated "near the water side in close built cities, under warm climates." This insight of Jefferson's was certainly far ahead of the medical knowledge of his time. On another occasion, Jefferson advised his son-in-law that "a person not sick will not be injured by getting wet, a cold bath never gives a cold to any one, and those are healthiest who are most exposed." Again Jefferson's practical observation did not lead him far astray.

When Jefferson's eyes began to require the aid of glasses, he investigated the practical aspects of the matter for himself. Through the courtesy of Dr. Jacob B. Feldman of Philadelphia, there is reproduced in Figures 1 and 2 the following interesting letter from Jefferson to Dr. John McAlister, of Philadelphia, in which Jefferson refers with confidence to Benjamin Franklin's invention of bifocal eyeglasses.

Washington, Nov. 12, '06.

Sir:

You have heretofore furnished me with spectacles, so reduced in their size as to give facility to the looking over their top without moving them. This is a great convenience but the reduction has not been sufficient to do it compleatly. I therefore send you a drawing. It is so much reduced in breadth as to give this convenience compleatly & yet leave field enough for any purpose & I will thank you for a pair of spring frames made accurately to the drawing and a set of glasses as mentioned in the same paper.

Those who are obliged to use spectacles know what a convenience it would be to have different magnifiers in the same frame. Dr. Franklin tried this by semicircular glasses joined horizontally, the upper and lower semicircles of different powers which he told me achieved perfectly. I wish to try it, & therefore send you a drawing No. 2 agreeably to which, exactly, I will ask another pair of spring frames to be made & a compleat set of semicircular glasses as mentioned in the paper. These will of necessity give up in part of the other convenience of looking over them. With these glasses I will pray you send me a pair of goggles with clean glass, and a little case of three magnifiers of different powers shutting up in a single horn case. They are used chiefly for reading off the fine divisions of astronomical or geometrical instruments, & are commonly to be had in the shops. The drawing in the margin gives an idea of the thing when all the 3 magnifiers are out. I presume these articles placed between two pasteboards may come safely by post. The amount shall be remitted you as soon as known. Accept my salutations & best wishes.

THOMAS JEFFERSON

On the second sheet of his letter, Jefferson made several drawings of the proposed spectacles, and gave the following measurements and instructions:

eye glass long diameter 3/4 I
radius 3/8 I
from center to center of eye
glass 2 1/2 I

each eye glass is composed of 2 semicircular lenses, the lower of a greater magnifying power than the upper, that is to say, of the next No. to the upper one.

A compleat set of half glasses to be sent from the magnifier adapted to the first use of spectacles, to that suiting the oldest eyes all fitting exactly the frames.
silver frames

eye glass long diameter 7/8 I
short diameter 3/8 I
from center to center of eye glasses 2 1/2 I

a compleat set of glasses from the youngest to the oldest to fit the frames
silver frames

The envelope was addressed to Mr. John McAlister, Chestnut Street 38, Philadelphia, and was postmarked "Washington City Nov. 12." Written across the top are the words: "free Tho. Jefferson, Pr US." Photographs of the letter itself, Jefferson's accompanying drawings and instructions, and the envelope are reproduced in Figures 1 and 2.

Although intensely interested in the science of medicine, Jefferson was skeptical about some of its practical aspects. In a long letter written in 1807 to Dr. Casper Wistor, Jefferson remarked:

"Experience teaches that there are certain substances by which, applied to the living body, internally or externally, will accomplish in a short time what nature would do slowly. I bow to the utility of medicine, but here the judicious, the moral, the humane physician should stop, but instead he forms his table of nosology, arrays his diseases into families, and extends his curative treatment by analogy to all the cases he has thus arbitrarily marshalled together."

Later in this letter Jefferson compiled specific treatments for diseases prevalent at the time and a very comprehensive *materia medica*.

In another letter, this one to James Madison, Jefferson wrote:

"I am sorry to hear of the situation of your family, and the more so as that species of fever is dangerous in the hands of our medical boys. I am not a physician and still less a quack but I may relate a fact. While I was at Paris, both my daughters were taken with what we formerly called a nervous fever, now a typhus, distinguished very certainly by a threadlike pulse, low, quick and every now and then fluttering. Dr. Gem, an English physician, attended them."

On another occasion, in the presence of Dr. Everett who was afterwards private secretary to President Monroe, Jefferson remarked that whenever he saw three physicians together he looked up to see if there wasn't a turkey buzzard in the neighborhood.

Dr. Robley Dunglison, Jefferson's personal physician for many years, was in a position to judge at first hand the extent of this skepticism of Jefferson's. Jefferson had appointed him the first professor of anatomy and

medicine at the University of Virginia because he possessed a "due degree of science, talents for instruction, and correct habits and morals." Dr. Dunglison observed that although Jefferson was critical of medicine in general, he was a most attentive and respectful patient and bore with fortitude any suffering inflicted upon him for remedial purposes. Jefferson himself could sew up an ugly wound or set a negro's broken leg, and in Dunglison's opinion, his delicacy of touch, dexterity of hand, fearlessness, and patience of investigation would have made him a master in surgery.

In general, Jefferson's most striking characteristics were his egotism, his industry, and his comprehensive learning. In his own scientific work he was often inaccurate, impractical, and visionary; as a patron of science, however, he was zealous, industrious, and benevolent. His voluminous correspondence was full of originality and interest, but in some of his writings and social contacts there was a definite lack of a sense of humor.

Jefferson's personal medical history began, in the usual manner, with his birth on April 13, 1743, in Albemarle County, Virginia, the third son of Peter and Jane Randolph Jefferson. As a youth, Jefferson was described as fresh, bright, and healthy looking, with large feet and hands, red hair, hazel-gray eyes, prominent cheekbones, and a heavy chin. His freckled skin was so tender that it blistered and peeled off after exposure to the wind or sun. He was slender, sinewy, and straight as a gun barrel. In later years he was tall and blond, somewhat stooped at the shoulder, rawboned, snub-nosed, and freckled. He was considered attractive but not handsome. In 1772, when he was twenty-nine years old, he married a widow, Martha Wayles Skelton, and in the course of time they had one son and five daughters.

In August, 1774, Jefferson was prevented from attending a meeting of the Continental Congress by an illness which he described as "stricture of the ilium" and for which he treated himself. His recovery was slow, probably because he dosed himself with 8 or 9 grains of calomel and some jalap, the former causing considerable salivation.

In September, 1786, while living in Paris as American ambassador, Jefferson was taking one of his daily walks when he fell and sustained a Colles fracture of the right wrist. He said nothing of it at the time, but supported the broken arm in his other hand. On arriving home, it was only on the insistence of his companion that a surgeon was called. By the time the doctor came, the arm was very swollen and discolored; it was never set nor were splints applied. The arm remained weak for many months and never completely recovered. Five months after the accident, Jefferson was ordered by his surgeon to make a trip to Aix to try the effect of the mineral waters on his arm. Needless to say, however, the results were nil.*

After Mrs. Jefferson's death in September, 1782, Jefferson suffered a severe mental depression which lasted for several months. He walked almost incessantly, day and night, and finally took long trips on horseback and foot. The family described his condition as the "fainting fits." Eventu-

*This accident also marked the end of Jefferson's violin playing. His Amati violin is now owned by Mrs. Béatrice Clark of Los Angeles and is valued at \$35,000.

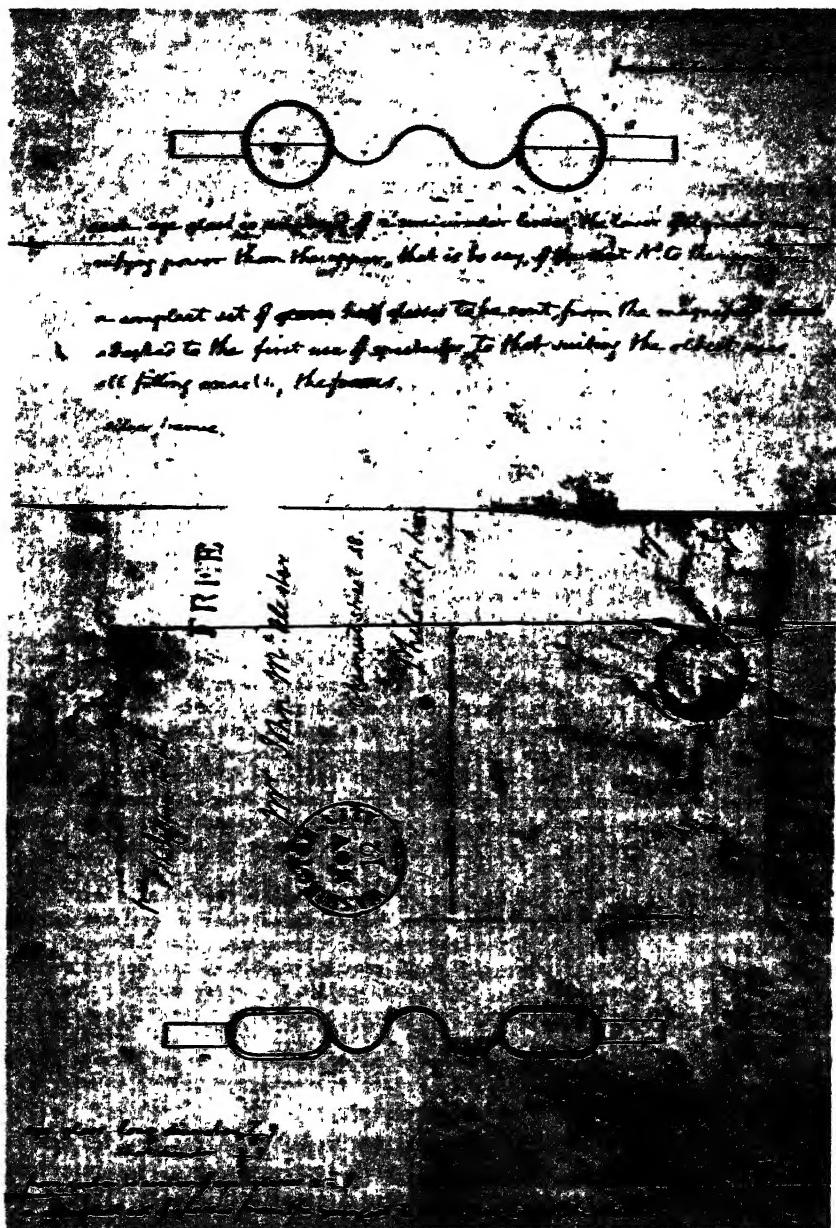


Fig. 2. Drawings and specifications for eyeglasses ordered by Jefferson.

ally he was able to regain his emotional balance, and we find no further record of physical upsets for almost twenty years.

In 1801, when Jefferson was fifty-eight and just beginning his first term as President, he had a severe attack of diarrhea which lasted several weeks and continued intermittently during the rest of his life. It was particularly severe from 1819 to 1822. His personal observations concerning this trouble were that fish was the only article of food which affected him, and that moderation in diet was very important. There can be no doubt that Jefferson was allergic to fish, but if that had been the only cause of his diarrhea, it would have been a simple thing to eliminate that article in his meals. Constipation was also an annoying symptom between his spells of diarrhea, and for this his remedy was horseback riding. With regard to his constipation he remarked, "I doubt the effect of medicine in chronical cases of this kind at any period of life, and still more at mine."

At the age of seventy-six, Jefferson had retired to Monticello, the home he had designed himself, after a lifetime of continuous public service. He had served as Secretary of State under Washington, as Vice President under Adams, and for two full terms as President. Yet in spite of these heavy responsibilities his health was still remarkably good. In a letter to Dr. Vine Utley he wrote:

"Like my friend [Dr. Benjamin Rush], I have lived temperately, eating little animal food. I double, however, the Doctors glass and one half of wine and even treble it with a friend, but halve its effect by drinking the weak wines only. The ardent wines I cannot drink nor do I use ardent spirits in any form. Malt liquors and cider are my table drinks. I have been blest with organs of digestion which accept and concoct without ever murmuring, whatever the palate chooses to consign to them, and I have not yet lost a tooth by age. I was a hard student until I entered the business of life and now, retired at the age of seventy-six I am again a hard student. Indeed my fondness for reading and study revolts me from the drudgery to letter writing, and a stiff wrist makes writing both painful and slow. I am not so regular in my sleep, getting 5 to 8 hours a night according as my company or the book I am reading interests me. I never go to bed without an hour or two previous reading of something moral whereon to ruminate in the intervals of sleep. But whether I retire to bed early or late, I rise with the sun.

"I use spectacles at night, but not during the day unless the print is small. My hearing is distinct in particular conversation, but confused when several are talking which unfit me for the society of the table. So free from catarrh that I have not had one (in the breast) on an average of 8 or 10 years of my life. I ascribe this exemption partly to the habit of bathing my feet in cold water every morning for sixty years past. Except on a late indisposition I enjoy good health; too feeble indeed to walk much, but riding without fatigue six or eight miles a day and sometimes as long as forty. I may end these egotisms by saying that my life has been so much like other people that I might say, with Horace, to everyone, "*nomine mutato, narrare fabula de te.*"

✓ In 1822, three years later, Jefferson wrote to John Adams that his health had been and was exceptionally good, with the exception of his intestinal troubles and severe headaches that recurred at long intervals. The latter complaint is suggestive of migraine. The following year, when Jefferson was eighty, he fell down a flight of steps from one of the terraces at Monticello and broke his left arm. He suffered a great deal of pain at the time,

and it was a serious inconvenience to him for the remainder of his life. His advanced age undoubtedly prevented a complete recovery. During this time he also complained of increasing deafness, and during the last three years of his life the intermittent diarrhea from which he had suffered earlier reappeared. He lost considerable weight and gradually became much weaker bodily. This became very apparent in the spring of 1826 when he finally sought medical advice. He consulted Dr. Dunglison of the University of Virginia, saying that he attributed his disease to his free use, some years before, of the water of the "White Sulphur Springs of Virginia." At this time, too, he became very distressed from a long standing "bladder ailment," which evidently was a prostatic hypertrophy with its consequent cystitis.

It was now apparent to Jefferson that he had not much longer to live. He made his will, and during the next few months he read the Bible a good deal of the time and also the Greek tragedies. Despite his weakness he kept up his daily habits, and in his rides as in the library and bedroom he would submit to no assistance. From June 24 to July 3, 1826, he was bedridden but serene, cheerful, and without pain. On July 3 he suffered enough pain to be given opiates, after which he sank into a deep sleep. At 1:20 p.m. on July 4, 1826, he died without regaining consciousness.

Jefferson's alternate spells of diarrhea and constipation would be considered today as indicative of a spastic bowel. This condition is of nervous or emotional origin, and although basic in the individual make-up, it is often precipitated by an intestinal infection. Jefferson's depression following his wife's death supports the belief that this illness resulted primarily from psychological causes, although he also had a chronic amebic dysentery, which often is mild in character and of very long standing. In addition, chronic diarrhea in an old person suggests an achlorhydria (lack of acid in the stomach) or a carcinoma somewhere in the gastrointestinal tract.

With these things in mind, it is fairly safe to say that Jefferson died of chronic amebic dysentery, complicated by heart failure, arteriosclerosis (hardening of the arteries), prostatic hypertrophy, cystitis, and possibly a malignant tumor of the intestine. The epitaph that Jefferson wrote for himself is a fitting tribute to his memory: "Here was buried Thomas Jefferson, Author of the Declaration of American Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia." One might add the words—"and, though a layman, a true pioneer in the fields of medical science and public health."

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James Madison

1751-1836

JAMES Madison was the oldest of twelve children to be born to James Madison, Sr., and Nelly Conway Madison. On the day of his birth, March 16, 1751, the future President's mother was nineteen years and two months old. It was probably a desire to be with her mother, rather than any lack of comforts and services at the Madison estate at Montpelier, Virginia, that impelled her to go to her childhood home in Port Conway, King George County, Virginia, for the birth of her first child.

Today, young "Jeemie" Madison would have been considered an emotionally unstable child. Although his parents were in only moderate circumstances, there were practically no chores for him to do during his boyhood, and his only exercise was horseback riding and walking in the fields and woods, where he developed a deep interest in the identity and habits of birds. He was frail and much smaller than other boys of his age, and records show that he had a "discouraging feebleness" or "singular disease" of the constitution. He also had many ailments of his chest and nerves, although no mention is made of any organic disease.

John C. Payne, the brother of Madison's wife, wrote in a biography of Madison that he suffered from a constitutional liability to sudden attacks of a character which suspended his powers of action. These "spells" of Madison's started to develop about the age of puberty and were considered an effect of indoor life and study. They were most frequent during his sojourn at Princeton University, where he finished the four-year course in a little more than two years. He did not take part in the graduation exercises because of this illness and because of the "weakness of his voice," as he explained later. This vocal weakness, which at times became an almost complete loss of voice, was another of Madison's youthful symptoms and for many years barred him from pulpit speaking and from the practice of law. Madison was thirty years old before he made a public address, but after that time his vocal troubles cleared up entirely.

The records of this early illness of Madison's show that one of the reasons for his inability to enter the military service during the Revolution was "a constitutional liability to sudden attacks of the nature of epilepsy." The fact that his trouble developed after puberty, however, and disappeared completely in the later years is definite evidence that this disease was purely functional in character and not a result of any organic defect of the nervous system. Today we would call it "epileptoid hysteria." Breuer and Freud, who followed the pioneering work of Charcot and

Janet in the study of hysteria, might have had Madison in mind when they made the observation that "one may meet persons of the clearest intellects, the strongest wills, greatest principles and of the subtlest minds" in this form of hysteria. They conclude that epileptiform convulsions, which are purely functional in character, are not the result of an actual brain lesion but represent the subconscious mind's reaction to a physical injury or a mental experience.

There is no indication in Madison's medical history that his illness resulted from psychic trauma, but it is common to find hysteria connected with the overstudy, daydreaming, hypochondria, and sense of physical inferiority which are revealed in many incidents of Madison's early life. The earliest known advice given Madison by his physicians was to study less and to increase his physical activities. Accordingly, he took again to his boyhood sport of horseback riding, and every summer for several years he visited Berkely Warm Springs in West Virginia, the same springs to which George Washington took little Patsy Custis in a fruitless attempt to relieve her epilepsy. July, 1779, was the date of one of Madison's visits to these springs after he had returned from Congress to avoid the so-called sickly season, which lasted until cool weather killed the malarial mosquitoes.

Despite his own low estimate of his health, Madison escaped all the common ailments, such as malaria, smallpox, tuberculosis, and yellow fever, which were so prevalent during his time. Nevertheless, he lived his early adulthood under the impression that he had a malignant and incurable disease. It was only gradually that his self-mastery and will power overcame this idea and transformed him into an active, energetic, and ambitious man.

Considering all these facts together, one is led to the conclusion that Madison suffered from a psychoneurosis of the anxiety type, with occasional hysterical spells which he himself interpreted as epilepsy. His various manifestations of depression, worry about his health, and his introspective habits all fit into the picture of a typical anxiety neurosis. His weak voice and hysterical spells were a part of this general condition, and there seems to be no doubt that he did not suffer from true epilepsy.

Madison's love life can be divided into three episodes. When he was already a confirmed bachelor of thirty-two, he fell in love with a sixteen-year-old girl whom he met in his Philadelphia boarding house. Another suitor of hers, a young clergyman, was evidently more persuasive, however, and the young lady sent Madison a note of dismissal and sealed it with a pinch of rye dough. Two years later, Madison became involved in another unsuccessful engagement and again was rebuffed. It was not until several years after this experience that another boarding-house romance, this time with the landlady's daughter, finally brought Madison success. This twenty-six-year-old widow was Dolly Payne Todd, and for both of them it seemed to be love at first sight. They were married in 1794, and Madison immediately settled his young bride, with her son by a previous marriage, at his home estate at Montpelier.

Madison, like Jefferson, served his country first as Secretary of State and

then as President, holding the latter office for two terms. He was probably the smallest of all Presidents, his height being somewhere between 5 feet 4 inches and 5 feet 6 inches. Always of frail physique, he never weighed over 100 pounds. He had a sallow, almost yellow, complexion, blue eyes, and brown hair, and later in life the top of his head was bald. The margins of his eyelids were red and scaly and gave him considerable trouble, a condition technically known as blepharitis marginalis. He had small hands and feet, and apart from a wizened countenance he could have been considered fairly good looking. Mrs. Madison's plump figure was in marked contrast to her undersized and slender husband, and her gracious manners endeared her to many of the President's constituents. In temperament, Madison was mild mannered, quiet, precise, and very companionable in spite of his inherent modesty and shyness. Contrasting Madison with Jefferson, Henry Clay remarked that Madison had more judgment and common sense, while Jefferson had more genius; Jefferson was a visionary and a theorist, while Madison was cool, dispassionate, practical, and safe.

From middle age on, Madison had frequent attacks of bilious fever. His yellowish complexion and lack of severe pain seem to indicate that he had cholecystitis, an inflammation of the gall bladder, with no gall stones. He also suffered from frequent spells of rheumatic fever. Here again, it may be realized how great was the lack in those days of adequate therapeutic measures, both medical and surgical. A gall bladder operation would surely have relieved Madison's "biliousness," and the modern serums and sulfa drugs, with elimination of foci of infection, would have given him a more comfortable old age.

Actually, there was no period after Madison's retirement in which his health was continuously good. His fingers and feet were badly crippled from arthritis, a condition which reached a crisis in June, 1832. Dr. Dunglison, at that time one of the eminent physicians of the country and holder of the chair of medicine at the University of Virginia, was consulted and made several emergency calls before Madison finally rallied.

When Madison was eighty-three years old, his frail body became very definitely senile. At that time, he was described as being very neat in dress, wearing short breeches and long silk stockings. His hair was worn in a queue tied with a bow of black ribbon. The pitch of his voice was lower than in his younger days, but he spoke clearly and distinctly. He still partook moderately of wine at the dinner table, and enjoyed a good joke although he never laughed boisterously. As his rheumatism became worse, he had his bed put in the library, and in this room he spent his declining months. During this time he became deaf in one ear from a senile nerve impairment, and his vision also became gradually poorer as a result of incipient senile cataracts. He wore gray worsted gloves to keep his hands warm and a gray and white knitted cap on his bald head.

In the spring of 1836, Mrs. Madison wrote an interesting letter to her friend, Mrs. Tobias Lear, in Washington, part of which read;

"My dear Husband is still confined to his bed. In addition to a disabling Rheumatism throughout the winter, he has had a bilious fever, which had reduced him so much that he can only walk from one bed to another. I never leave him more than a few minutes at a time, and have not left the enclosure around our house for the last eight months on account of his continued indisposition, concerning which friends at a distance have rec'd but too favourable reports. Our Physicians have advised the Warm Springs for Mr. Madison, and we hoped to have taken him there, but as he could not travel unless conveyed on his bed, we dare not think of it at present."

About the same time, Madison personally wrote a postscript in his wife's letter to a mutual friend:

"I am very thankful, my kind friend, for the interest you take in my health. It is not good, and at my age nature can afford little of the medical aid she exerts on younger patients. I have indeed got through the most painful stages of my principal malady, a diffusive and obstinate rheumatism; but I feel its crippling effects on my limbs, particularly my hands and fingers, as this little effort of the pen will show."

Early in the summer of 1836, a report went forth that Madison was sinking. Nevertheless, he was moved each day from his bed to his chair. His mind continued active and clear, although a few days before his death he expressed some concern that he was unable to connect readily his memory of events. On the evening of June 27, 1836, he was visited for the last time by his physicians—Dr. Charles Taylor, his cousin and family doctor who had attended him for the past twenty years, and Drs. Thomas Slaughter and Peyton Grimes of Orange.

Madison had become extremely emaciated, reduced to mere skin and bones, and was growing steadily weaker. On the morning of June 28, 1836, he was moved from his bed to his chair as usual; his niece brought him his breakfast and left it with him, urging him to eat. When she returned to the room a few minutes later, he was dead.

Looking back over Madison's physical record, it is evident that much of his ill health was the result of psychological and emotional factors. His frailness as a boy brought him a feeling of inferiority that persisted for many years, for in childhood and adolescence physical prowess is usually the most important requirement for popularity and respect among other boys and girls. This feeling of inferiority in turn expressed itself in his hysterical spells and loss of voice. Not until he was fully adult and able to achieve recognition for his truly superior mental abilities did Madison manage to overcome, to a great extent, the neurotic symptoms he had developed as an overly sensitive boy. His frail physique and shyness remained with him always, however, and probably had much to do with the unsuccessful outcomes of his first two love affairs.

But Madison's neuroticism was not enough to account for all of his ailments, and certainly not for his death. His rheumatism was a definitely organic disease, probably of the type known as arthritis deformans rather than the kind of rheumatic condition that involves the heart valves. The infected gall bladder that he had for years may have been the focus of this rheumatism. Moreover, the senile impairments of Madison's sight and hearing as he advanced in age were undoubtedly concomitants of an increasing

hardening of the arteries. It was this arteriosclerosis and, specifically, a coronary sclerosis with a gradual coronary insufficiency (heart failure) that finally caused his death. The long-standing infection in his gall bladder was also a contributing factor.

It is paradoxical to realize that this frail little man, who was always so conscious of physical inferiority, lived to the age of eighty-five years and three months. Evidently James Madison had more strength than his modesty would permit him to recognize—strength of body, of spirit, and of selfless devotion to the republic.

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James Monroe

1758-1831

JAMES Monroe was the last man of the heroic Revolutionary era to become President. Like Washington, he first served his country as a soldier before he attained its highest political office. In other ways, too, the lives of Washington and Monroe were similar and based upon a common heritage. Both were born in Virginia, the "mother of Presidents," in Westmoreland County, although Washington was already twenty-six years old on April 28, 1758, the date of Monroe's birth. Both came from landowning families who were at least moderately well to do and were definitely among the "aristocracy" of the country. Finally, both were men far above the average, not only in physical stature but also in political statesmanship.

During his country boyhood, James Monroe was average in build, health, and awkwardness. He matured early, however, and at the age of sixteen was already a large man with great physical strength. Two years later, with many of his classmates at William and Mary College, Monroe joined the Revolutionary Army under Washington and was made a lieutenant in the Third Virginia Regiment. In a furious battle at Trenton, New Jersey, Monroe was struck in the left shoulder by a bullet while attacking an entrenched artillery stand. The wound severed a large artery, and if it had not been for the immediate aid of a Dr. Ryker, the injury might well have been a fatal one. Under the constant care of this physician, Monroe, with the other badly wounded men, was ferried over the bay to a convalescent camp, where he eventually made a complete recovery. The episode gained for Monroe both a promotion to a captaincy and, since the bullet was never removed from his shoulder, a souvenir that he carried for the rest of his life.

While a young man in Congress, Monroe was frequently absent from the legislative sessions. The explanation given at the time was that when a man is sick in bed he is certainly too sick to go to Congress. While there is no reason to doubt the truthfulness of this story, no other references were made concerning the nature or seriousness of his illness. It is quite possible, however, that Monroe had some gastrointestinal disturbances, just as many soldiers had following active army service.

In character, Monroe was a modest, kindly, and plain man, considerate of all, simple and polite, although a little awkward in manner. He stood about 6 feet tall and was rather angular and boney in features and build. Both in youth and in middle age, his body was compact, strong, and enduring. His mind was slow and steady, rather than brilliant, and he had no

gifts as a speaker; but he nevertheless attained the highest office in the land by virtue of his rugged, courageous, industrious, honest, and loyal character. In later life, Monroe's strong mind and excellent judgment were revealed in his framing and writing of the famous "Monroe Doctrine," the principles of which have guided the Western Hemisphere to this day.

Monroe was formal in manner and was always carefully dressed, usually in a dark blue coat, buff vest, smallclothes, and top boots. He wore a cocked hat of the Revolutionary style, and has been called "the last of the cocked hats," for he was the last of the Presidents to adhere to the fashions of the previous century. His face was mild and grave, and although he was very courteous, he was never familiar in his dealings with men, preferring to keep to a strict observance of official ceremony. He had been in public life from youth, and was highly esteemed for his true and gentle nature. In the opinion of his time he was "one of the purest of public servants that ever lived."

During his presidency, which he held for two terms from 1817 to 1825, it was Monroe's pocketbook rather than his health which suffered. Soon after the inauguration of his successor, he retired to his country estate, Oak Hill, in Loudoun County, Virginia. Although he was by then in his late sixties, he continued to take an active interest in the local government and spent a great deal of his time in writing. Almost daily, circumstances permitting, he took a morning and evening horseback ride. In 1829, when Monroe was seventy-one years old, he fell from his horse on one of these rides and sprained his wrist. This injury caused a stiffening of the fingers of his right hand, and necessitated the aid of his friend and companion, Judge Watson, in keeping up Monroe's voluminous correspondence.

Judge Watson later described Monroe at this period of his life in the following words:

In person Mr. Monroe was about six feet high, perhaps rather more; broad and square shouldered and raw boned. When I knew him he was an old man (more than seventy years of age) and he looked perhaps even older than he was, his face being strongly marked with lines of anxiety and care. His mouth was rather large, his nose of medium size and well shaped, his forehead broad, and his eyes blue, approaching gray. In his intercourse with his family, he was not only unvaryingly kind and affectionate, but as gentle as a woman or a child. He was wholly unselfish. The wishes, the feelings, the interest, the happiness of others were always consulted in preference to his own. He always used the plainest, simplest language, but was not fluent. He lacked the versatility, and I should say also the general culture requisite for shining in the social circle, but was always interesting and instructive; when with good listeners he led in conversation, and talked of the scenes and events through which he had passed *et quorum magna pars fuit*. Love of country and devotion to duty appeared to me to be the explanation of his success in life and the honors bestowed upon him.

Monroe's fall in 1829 marked the beginning of a rather rapid decline in his health. After the death of his wife in 1830, he moved to New York City to be near his two daughters who were married and living there. Perhaps this exile from his lifelong home weakened his grasp upon health and life. At any rate, by the next year he was bedridden a good share of the

time. On April 11, 1831, he wrote to his friend, James Madison, complaining of a severe cough which kept him awake day and night, and which was accompanied by profuse expectoration. Although Monroe refused to consider these symptoms the result of lung disease, there can be no doubt but that he was suffering from a chronic bronchitis which greatly weakened him.

During that spring and early summer, Monroe was failing day by day, although he retained his mental faculties to the end. In the last few days of his life, his respiratory infection became acute, with a severe cold in his head and chest, and this complication, along with the arteriosclerosis of old age, contributed to the heart failure that finally caused his death. The careful and tender nursing of his daughter, Mrs. Nicholas Gouvernor,* at whose home he was staying, could not save him, and on the afternoon of July 4, 1831, James Monroe died at the age of seventy-three.

Contemporary newspaper accounts of Monroe's death observed that "he expired without a struggle," and "for several days his death had been momentarily expected." Evidently Monroe had expected death, too, and during his last week of life his mind went back to old Virginia and to his friends there. On the day of the funeral, Tench Ringgold wrote to Madison that "in his last illness Monroe had often spoken of you and your friendship of forty years," and had expressed his regret "that he should leave the world without beholding you."

For many, that Fourth of July must have been a day not of celebration but of sadness. Perhaps it was fitting, however, that James Monroe, like John Adams and Jefferson five years earlier, should die on the birthday of his country's independence, the independence which he himself had fought for and loyally served.

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*Miss Maud Campbell Gouvernor, the oldest living descendant of President James Monroe, died during the summer of 1947, just ten days before the ninety-first anniversary of her birth.

John Quincy Adams

1767-1848

JOHN Quincy Adams, like his father before him, was born in the town of Braintree, later called Quincy, Massachusetts, on July 11, 1767. He was a very healthy boy, vigorous and vivacious both in mind and body, and known for his good humor. He was probably a precocious youngster, for he had a tendency to seek the conversation and company of his elders in preference to the ordinary play and games of childhood. His health in young adulthood was excellent, and he developed a strong physique and extraordinary powers of endurance. Only very occasionally did he exhibit any of the mild depressions which seem to be an inescapable part of youth and mental sensitivity.

Almost from childhood, young Adams participated in diplomatic affairs and travels, first as companion and sometimes as assistant to his father, and later as an accredited minister for his country. On one of his trips to London, he met Miss Louisa Catherine Johnson, daughter of the American consul, Joshua Johnson, and they were married a short time later on July 26, 1797. In the course of time, three sons and one daughter were born to them.

By the time Adams was middle-aged, he was still in vigorous health. He was short in stature and baldheaded, like his father, but not as fat. He was the most shabbily dressed of all the Presidents, caring little about his personal appearance, wearing old clothes as much as possible and refusing to discard old hats and shoes. He seldom drank or smoked and was temperate and regular in all his habits. Though rather cold, critical and sour, he was a man of honor, poise and great patriotism. His nickname, "Old Man Eloquent," was based on the contents of his speeches rather than their delivery, for his voice was high, shrill, and liable to break. This vocal defect was probably due to chronic laryngitis with consequent difficult phonation in the middle register.

After his inauguration as President at the age of fifty-seven, Adams kept fit by walking and swimming and later by horseback riding. Swimming was his favorite of these sports, and every morning, weather permitting, he took a dip in the Potomac. On one occasion, he and his servant, Antoine, started across the river in a leaky canoe with the idea of swimming back. The canoe suddenly sank, and although Antoine, who was naked, easily swam to shore, Adams, impeded by clothing, had quite a struggle and barely escaped with his life. He later remarked that "while struggling for life and gasping for breath, I had ample leisure to reflect upon my own indiscretion." Adams considered swimming very essential as recreation, but in the light of this

incident it is easy to see why his family and friends regarded his devotion to the sport with much anxiety.

In spite of his regular exercise and physical fitness while President, Adams often complained of feeling ill, dejected and weary. Several attempts at assassination, of which there is no public record, did nothing to increase his peace of mind, but they left no permanent effects upon him. As early as October 7, 1833, however, some fifteen years before his death, he feared that his health was "irrecoverable; I get but five hours a night of disturbed sleep—full of tossings."

On February 17, 1834, after Adams had left the presidency and returned to Congress, he had an acute attack of laryngitis. His "voice was so hoarse and feeble that it broke repeatedly, and he could scarcely articulate." He considered that this attack would mean the loss of his voice forever and that it was useless to contend against the decay of time and nature. His pessimism proved to be unfounded, however, and he made a complete recovery. This illness was evidently of an infectious nature and not specific or tuberculous in origin.

In June, 1840, while still a member of the House of Representatives, Adams sustained a very serious injury. He was leaving the House one day, and while lifting his arm in a greeting to a clerk, he suddenly stumbled forward six or eight feet, striking his head against the sharp corner of a railing which circled the desks. He received a long deep gash in his forehead and lay unconscious on the floor. Cold water was applied to the wound, and with the aid of several men, Adams, now conscious, was taken to his Washington home. Dr. Sewall was called immediately and made a diagnosis of dislocation of the left shoulder. Even with the combined aid of several attendants, it took more than an hour to reduce the dislocation. No anesthesia was used, and throughout the whole procedure Adams maintained a stoic silence, although the cold perspiration on his brow and face gave evidence of the intense agony he suffered. His stamina was remarkable for a man of seventy-two. The very next day he returned to the House chamber, looking for the place in the matting which had tripped him so that it could be repaired and cause no further trouble. In the light of later events there is a faint possibility that Adam's fall was caused not by his tripping on the carpet, but by a slight cerebral hemorrhage, or stroke. However, this possibility must remain in the realm of conjecture.

During his years as a congressman, Adams' health began to fail quite definitely. His voice became very feeble at times, and his vision gradually grew poorer, probably from the same type of incipient cataracts that had also afflicted his father. During the depressing heat wave in Washington in August, 1842, Adams first noticed the premonitory symptoms of his fatal illness. He would awaken with the bloodshot eyes and a shivering hand, and before long, physical weakness and impairment began to interfere more and more with his usual duties. A significant entry in his diary on March 25, 1844, reads:

"The physical disability of insomnia, smarting eyes and shaking hands must soon put a stop to this diary."

In 1846, Adams visited his son at Boston, and on the morning of Novem-

ber 19, after packing his grip for his return to Washington, he decided to take a walk to visit a friend at a new medical college which had just started. On his way, he suddenly fell to the sidewalk, the victim of a stroke. He was paralyzed on one side, but after two weeks in bed and about three months of convalescence, he was able to resume his duties at Washington. Although he attended Congress regularly thereafter, Adams was visibly a much weaker man, both in mind and body. Sixty years of active public life had taken their toll, and now of necessity he had to practice a measured inactivity.

About this same time, Adams met a friend on a street in Boston who asked genially, "And how are you today?" Adams hesitated, then, speaking with difficulty, made a significant reply: "John Quincy Adams himself is quite well, thank you. But the house in which he has been living is now dilapidated. It totters on its foundations. Time and the seasons have nearly destroyed it. The walls are shattered, and the building trembles in every wind. Before long, John Quincy Adams will have to move out. But he himself is quite well."

The final scene of Adams' life was not far off. On Sunday, February 20, 1848, he went to church as usual and appeared to be in very good health despite his age. On Monday, the 21st, he attended Congress and listened to a resolution being read expressing thanks to the generals of the Mexican War for their brave conduct and skilled strategy. Suddenly, at about one-thirty in the afternoon, Adams stood up as though to address the House. There was a cry from the members as he clutched his desk with groping, convulsive fingers and then sank back into his chair, unconscious.

A fellow member quickly bathed his face with ice water compresses. Adams was then carefully moved onto a sofa in the Rotunda of the Capitol. The five medical members of the House, Drs. Newell, Fries, Edwards, Jones, and Lord, were in constant attendance. He was cupped, or bled, several times, and mustard poultices were applied to his chest and back. His arms and legs were rubbed thoroughly in what was then called "friction treatment." Drs. Lindsley and Thomas of Washington were called in consultation, and on their advice leeches were used. These remedies were, however, of no avail. Except for an hour or two that afternoon, Adams remained unconscious until his death two days later. His entire right side was paralyzed and the muscles in his body twitched almost constantly.

At seven o'clock in the evening of February 23, 1848, John Quincy Adams died of cerebral hemorrhage, or apoplexy. His eighty years and seven months had been devoted to public service, and only at death could he accept a well earned rest. His words, uttered on February 21, were, "This is the last of earth! I am content."

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Andrew Jackson

1767-1845

ANDREW Jackson was the first true son of the people to become President of the United States. Until his inauguration, only men from wealthy landowning families had held the office of President, and the United States had not yet escaped the danger of developing a limited, ruling-class aristocracy. Jackson's election, however, showed that by now the great majority of the people wanted a man from their own ranks to represent them in the country's highest office, and that in practice as well as in theory the United States was to have a government of the people and by the people. Andrew Jackson was the first embodiment of the log-cabin-to-White-House tradition that is held so dear today as a symbol of real, working democracy.

Jackson was born on March 15, 1767, in the pioneer settlement of Wax-how, South Carolina. His parents had come originally from Ireland, and the family was by no means well off, especially since Andrew's father had died of a strangulated hernia six weeks before young Andrew's birth. From the beginning, Andy might have been considered a precocious child. At the age of five he was able to read, and at eight he wrote a "neat legible hand" and was intensely interested in geography, especially the reading of maps. When he was nine, to use his own words, he "was selected as often as any grown man in the settlement for public reading." At this time, his voice was a high-pitched soprano, and he was able to read aloud for long periods of time without stopping to spell out words. This was a really remarkable accomplishment when one considers that at that time most adults could not read at all and were satisfied to sign their names merely with an "X." Because of these abilities of Andy's, his mother was very anxious that he become a minister, but although this wish was never granted, she could hardly have failed to be proud of the achievements he did attain.

As a boy, Andrew was tall, lean and remarkably agile. He had a freckled face, bright blue eyes, tousled hair which was almost red, and a temper to match it. He was always ready to fight at the slightest provocation, a trait he bore throughout his life, and although he might have been called a bully, he had none of the usual bully's cowardly qualities. He never admitted defeat or gave up in a struggle. Both as a boy and later in life, he had a habit of "slobbering" at the mouth, but reference to it by anyone invariably meant a fight, whatever the odds. He was extremely sensitive to ridicule of any kind. On one occasion some of his companions gave him a musket which had been loaded to the muzzle. When Andy fired it, the recoil sent him sprawling, but getting up with eyes blazing, he yelled, "By God, if one of you laughs, I'll kill him."

When he was thirteen, Andrew enlisted in Major Davies' "dragoons," along with his sixteen-year-old brother, Robert. This was his first taste of army life and his first experience in helping to take care of the wounded. During the British invasion, a Tory by the name of Johnson came upon Andy and his brother, and in an imperious voice demanded that his boots be shined. Andy very promptly and positively refused, with the result that the officer lifted his sword and struck a violent blow. Andrew's left hand, which he had thrown up in an effort to guard himself, was cut to the bone, and the sword then struck his face, leaving a deep gash which extended into his scalp. Both boys were taken to Camden as prisoners, and only a few days later both were stricken with smallpox, which at that time was especially prevalent in the prison camps. Robert died within two days, and Andrew became delirious and ran a high fever. He finally recovered only because of the able attention of the doctors and the skillful nursing of his mother.

By the time Andrew Jackson was eighteen, he was 6 feet tall, an expert horseman, and an attractive young man in spite of the pock marks on his long face and the rather prominent scar that ran across his forehead. He had become very interested in girls, and they in turn regarded him as quite agreeable and a "lack, leaning forward person." He was considered wild by his associates, gambling and drinking with the best of them. When calm, he talked slowly in very correct English, but when excited, his speech was rapid and marked by a thick North Irish brogue.

In 1791, when Jackson was twenty-four, his period of sowing wild oats evidently came to an end, for in August of that year he married Rachel Donelson Robards at Natchez, Mississippi. The young couple then returned to Tennessee, where they went to live at Jackson's home, Hunter's Hill. Rachel had been informed at the time of her marriage that her first husband, Mr. Roberts, had obtained a divorce. She had left him because of his drinking and uncontrollable jealousy, but Robards waited three years before he went before the courts and actually got his decree. In this action he showed his cowardice, for he took his decree on the statutory act instead of desertion, as he should have done three years before. Jackson remarried his wife on January 17, 1794, but malicious gossip and slander assailed them nevertheless. Jackson's reaction was characteristic—he bought two deadly rifled dueling pistols. It was not long before he was involved in a duel in which he shot and killed Charles Dickinson.

Dickinson, a member of a distinguished Baltimore family, was considered the best shot in the Southwest. After drinking rather heavily at the Old Nashville Inn, he denounced Jackson as a coward and poltroon, and in pure malice sent his unforgivable shaft as well: "He lived two years with his wife before he was married to her." The consequences of this insult were inevitable. Through his good friend, General Overton, Jackson sent a challenge for a duel, and Dickinson accepted.

The site chosen was the dueling grounds on Red River in Logan County, Kentucky, about one day's ride from Nashville. Jackson's Galway Code pistols, with nine-inch barrels, ounce balls, set locks, and hair triggers, were

used. On the command, "Fire," Dickinson was the first to shoot. Overton saw dust fly from Jackson's coat over his heart, saw him swerve, and then, like the hickory he was, stand up erect. Dickinson stepped back and cried, "My God, have I missed the damned scoundrel?" Overton then forced Dickinson back to his mark. Jackson calmly and deliberately took aim, but at the touch of the hair trigger, the pistol that had never failed him stopped on the half-cock. Grimly, the wounded general recocked his pistol and fired. Dickinson collapsed.

A physician, Dr. Catlett, who was Dickinson's second, was the first to examine and care for his wound. Dickinson's body had evidently been turned sideways, for the bullet had entered the lower right quadrant of the abdomen, then penetrated the intestines and lodged on the inner surface of the left pelvic, or hip bone. Dickinson lived only fourteen hours after being shot. Jackson, too, was severely hurt, and as he walked from the field, his left boot was already half full of blood from the dangerous wound in his chest. The bullet had entered his body close to the right nipple, burrowed its way across the chest, and, deflected by the sternum (breast bone), had shattered two ribs on the left side before it finally lodged in the pleural cavity near the heart. The external wound healed in four or five weeks, but it is questionable whether the lung wound ever healed completely. According to Jackson's surgeon, the wound would have been fatal had the bullet entered 1 inch farther to the left. Dickinson's aim had been all too true, but he had misjudged the position of Jackson's heart because of the set of his coat, which hung quite loosely on his extremely slender figure.

In September 4, 1813, when he was forty-six years old, Jackson was a participant in another shooting affair. This time it was with the Benton brothers, Tom and Jesse, and started, as before, at the Nashville Inn. In a general free-for-all fight, Jesse Benton fired at Jackson's back but missed him entirely. His brother, Thomas, then fired point-blank at the general, and immediately there was a profuse hemorrhage from the prostate man's side. He was carried to a bedroom at the Inn, and even before he could be undressed, two mattresses were completely soaked with blood. When physicians arrived, they found him practically exsanguinated.

The half-ounce bullet had struck the biceps muscle of the left arm, coursed along the humerus, the long bone of upper arm, and then buried itself in the muscle tissue at the edge of the left scapula, or shoulder bone. The tissues along the pathway of the bullet were badly torn, and the humerus was shattered in a compound comminuted fracture. When Jackson arrived at home, his physicians stopped the bleeding and applied clean dressings, but within twenty-four hours infection set in, and for several days he had a high fever. Bits of bone came out with the pus, and his condition became very critical. After a conference of the physicians, Jackson was advised to have his arm amputated. One doctor dissented from this advice, however, and upon hearing this Jackson said, "I'll keep my arm."

In spite of the inefficient treatment he received, Jackson's condition gradually improved, but even during his convalescence numerous abscesses developed along the course of the bullet, and had to be opened and cleaned out. For several months he wore his arm in a sling, and his general condition was very poor as a result of infection and loss of blood. It was not until the summer of 1815 that he finally recovered from this injury.

Even a wound as severe and painful as this one was could not keep Jackson inactive, however. Three months after it was incurred, Jackson was back in harness, fighting the Indians, even though he was forced to carry his still useless left arm in a sling. During this campaign, Jackson had a very severe attack of dysentery. His main symptoms were constant diarrhea and intermittent spells of abdominal cramps. The latter caused him such agony that he would half suspend himself by dangling his arms over a horizontal sapling pole and stay in this position for hours at a time. Though in time its severity decreased, Jackson never completely recovered from this infection. Later in this campaign Jackson was wounded on the top of his left shoulder, just above the old wound inflicted by Benton's bullet, but this time recovery was both quick and complete.

During this same war with the Creek Indians, Jackson adopted a two-year-old orphaned Indian boy. He was sent to the Hermitage, Jackson's home near Nashville, and lived there until he died of pulmonary tuberculosis at the age of twenty. His death from this dread disease is evidence that its infection lurked in the environs of Jackson's home, and might have presaged the nature of the illness that finally was to conquer Jackson himself.

In April, 1814, Jackson came down with a severe intestinal infection accompanied by high fever and chills. His old shoulder wound became aggravated and very painful, and for several weeks he was confined to bed. These illnesses were beginning to tell, even on Jackson's tough fiber, and his appearance reflected the ill health he had suffered. At the end of 1814, when Jackson was forty-seven, he was described by one of his New Orleans hostesses as a tall, gaunt man, very erect, and with a countenance furrowed by care and anxiety. His eyes were still bright and hawk-like, but his complexion was sallow and unhealthy-looking, and his iron-gray hair was beginning to recede at the temples. His body was thin and emaciated, like that of a man just recovered from a lingering sickness. Yet, in spite of all this, his manner was assured, his voice rich, and his diction flawless.

Another description of Jackson at this time, given by Jesse Benton, calls the general "blood-thirsty, dishonest, and incompetent; a mediocre politician, a cock-fighter, horse-racer, gambler, brawler and participant in shady land deals; a military chieftain whose renown rested on the deeds of his subordinates." Enemies of this kind must have done their part in undermining Jackson's health and peace of mind.

About one year later, in 1815, Jackson had an acute exacerbation of his chronic dysentery, which disabled him considerably and was probably brought on by indiscreet eating and overwork. This condition gradually evolved into a state of nervous exhaustion by May, 1815, and it was five

months before Jackson recovered. Again in 1818, he spent many weeks in his bed or easy chair and gained considerable weight. About this time, with one of his physicians present, Jackson remarked of his wife, "She pulled me through in spite of myself and the doctors."

Jackson's poor health was the main reason for his leaving Florida, where he had been governor, in 1821. At this time, a distressing cough and inflammation of the lungs were added to the symptoms of the dysentery he contracted in the Creek Indian campaign. Home life improved his health until he caught a bad cold during the winter. This was followed by a violent cough and an aggravation of his bronchitis. This condition may have been complicated both by his old chest wound from the duel and a possible incipient pulmonary tuberculosis. His dysentery still recurred at frequent intervals and greatly weakened him. During his first year at the Hermitage, 1822, he still complained of a persistent cough and also much pain in his side and shoulder. Before long he developed a secondary anemia in addition to these other numerous infections, and it wasn't until well into 1825 that he seemed to be fully recovered.

During these years, Jackson had gradually been losing his teeth, and in pictures taken when he was fifty-eight or fifty-nine years old, the drawn-in lips give unmistakable evidence of his lack of teeth. This condition made it difficult for him to articulate and was a good excuse to avoid public speaking, which he disliked very much. Records show that a Nashville dentist made complete upper and lower dentures for Jackson in 1826.

In 1825, Mrs. Jackson began to complain of dizziness, faintness, and difficult breathing. For three years she was an invalid, and her attending physicians made a diagnosis of fatty degeneration of the heart. On January 22, 1828, her condition became much worse, and although her physician, Dr. Robertson, attempted to bleed her, it was already too late. She died that evening. After her death Jackson suffered a complete emotional breakdown. This was just a few months before his inauguration, and the condition of Jackson's health became a universal topic of conversation. There were even rumors of his death. It was a grief-stricken man who finally moved to Washington. Nevertheless, during his first term as President, Jackson's personal appearance gave the impression of energy and daring. He was tall, slim, and straight, and his gray hair was still thick, with a tendency to stand straight up in the air. He had a deeply furrowed brow, a prominent nose, and a firm mouth.

It was not until 1830, when Jackson was sixty-three, that the first symptoms of another disease appeared—swelling of both his legs. Physicians thought that this was probably a fatal "dropsy," but Jackson rallied and continued to serve his country. This was probably an indication of kidney deterioration, and also the first sign of decompensation of a heart that had already weathered many a storm. During his first term as President, Jackson also suffered an attack of malaria, but it was not serious and he recovered quickly.

For years, the bullet fired by Thomas Benton had remained embedded in

Jackson's arm, causing recurrent pain and at times rendering the arm almost useless. Jackson's physicians had concluded that the ball was poisoning his system but hesitated to remove it for fear of shock to the heart, against which lay another bullet which they thought could never be disturbed—the bullet fired by Dickinson in Jackson's first duel. Today, however, medical science would reject the idea that either bullet was poisoning the system, although modern surgery could have removed the chest bullet had it been necessary. Eventually, in January, 1832, Dr. Harris from Philadelphia and Dr. Triplett of Virginia advised an operation for the removal of the bullet in Jackson's arm. "Old Hickory" again showed his courage by his ready consent. Without anesthetic of any kind, the arm was incised and the bullet, which had become thoroughly encysted, was removed without difficulty. Recovery was quick, complete, and without complications. Shortly after this operation Jackson was thoroughly examined by one of the foremost physicians of the day, Dr. Phillip Syng Physick. Just before the examination, Jackson had promised to co-operate in any way possible, short of giving up coffee or tobacco, but the doctor's findings were negative in every way, and no restrictions were advised.

During the early winter of 1833, the President made a tour of the New England States. While in Boston he was confined to his bed with a severe cold, and for the first time coughed up blood from his lungs. Though he recovered sufficiently to continue with his trip, he was met at each stop by physicians who put him to bed and forbade any public speaking. In spite of these precautions, Jackson had a very severe pulmonary hemorrhage just before entering Concord, New Hampshire. He collapsed completely and had to be taken back to Washington by steamer. For forty-eight hours his life was despaired of, but his tough old body eventually rallied again in spite of being bled on several occasions. Not long afterward, while preparing his second inaugural address, Jackson was again seized with a severe coughing spell during which blood gushed from his mouth. His physicians immediately cupped and blistered him, and then, as if the hemorrhage had not taken enough, 60 ounces of blood were drawn off from his arm. Nevertheless, in two days he was up again, proving once more the truly hickory-like hardiness of his constitution.

These illnesses were not the only attacks Jackson had to contend with. He was the first President of the United States to be the victim of attempted assassination. Several such attempts were made upon him, but only one, on January 30, 1835, came near to being successful. As Jackson was descending the east front of the Capitol after attending funeral services for Representative Davis of South Carolina, a house painter named Richard Lawrence fired two pistols point-blank at him, but both "flashed in the pan." Jackson was the first to realize what had happened. Using his cane as a club, he started after the man, but a young army officer reached him first. After his capture, Lawrence asserted that Jackson had killed his father, but when it was discovered that the man's parents had never left England, he was committed to an insane asylum.

Jackson's health declined quite rapidly during his second term at the White House, and during the last four months he was confined to his room. Van Buren's first official act, upon succeeding Jackson as President, was to appoint Colonel Thomas Lawson, surgeon general of the army, as personal physician to Jackson on his return trip to the Hermitage.

For the first six years after his retirement from the presidency, Jackson's health was not much worse than it had usually been in Washington. Every attack of bleeding from the lungs, however, left him a little weaker than he had ever been before, and his recovery from each attack was slower and less complete. During the last two years of his life, he could never be said to have completely rallied from these attacks, but remained always very weak. He knew few intervals, and those very short, of relief from pain. A cough tormented him, day and night. By this time his symptoms were unmistakably those of lung tuberculosis. One lung was collapsed entirely and the other was diseased. Six months before his death certain dropsical symptoms, which had threatened him for years, became fully and painfully developed; and from that time on he was alternately swollen by dropsy and then both relieved and prostrated by diarrhea. At times, to use his own words, he was "one blubber" from head to foot; and when he seemed to be threatened with immediate death from this disease, he would be saved by the diarrhea, which reduced him so low that he would recline for many hours helpless and feebly grasping for life. The moment he recovered a little strength, the dropsy regained its power, and again he swelled, only to be relieved and reduced as before.

The patience which he displayed during those years of dissolution sometimes approached the sublime. No anguish, however severe or protracted, ever wrung from this usually irascible man a fretful or complaining word. Up to his last hour he was seldom so far subdued by pain that he could not converse with animation upon political topics.

The first mention of the illness that proved to be Jackson's last is found in a letter to his adopted son, Andrew Jackson, Jr., written January 4, 1840, on the steamer Vicksburg. He was on his way to New Orleans to help celebrate the formal observance of the twenty-fifth anniversary of the Battle of New Orleans. At this time he had a pulmonary hemorrhage, following which every breath was a torture. The pain in his chest continued for ten days, but on the homeward-bound steamer it quite suddenly ceased and he was peacefully comfortable. During the summer of 1840 he had a few spells of "chills, shakes, and fever," and by the following spring, when he was seventy-four, he had become very weak and feeble. For his persistent cough, he took a mixture, probably sedative in nature, called "Matchless Sanative," which he recommended to many of his friends for a variety of conditions. He was scarcely able to write, and on April 23, 1842, he complained of severe pain in his ears, eyes, and head. At intervals he had spells of fever and chills, which may have resulted from intestinal infection but much more probably were further signs of pulmonary tuberculosis. Gradual diminution in the vision of his right eye was noted in the

summer of 1842 and indicated the development of a senile cataract. By the time of his death, he had a mature cataract in his right eye and an immature one in his left eye. Albuminuric retinitis (inflammation of the retina associated with kidney disease) may have been a considerable factor in his poor vision.

By the summer of 1843, Jackson's general debility had become very marked. This man who had spent a lifetime on horseback could no longer ride, and he could not walk without aid to the grave of his dead wife, Rachel, in the garden. He had to be propped up to his table in order to write. In the meantime, his hemorrhages and shortness of breath continued. On January 21, 1844, he was confined to a wheel chair with a writing table attached to it. He never left this chair, except for bed, for the remaining eighteen months of his life.

In a letter to the *New Hampshire Patriot* written in March, 1845, Isaac Hill tells of his impressions on visiting Andrew Jackson at the Hermitage. He writes that Jackson was unable to take his meals with the rest of the family, and that he sat in his wheel chair with writing materials, a miniature Bible, and a hymnbook always before him. His chief complaint was pulmonary, and Jackson himself realized that one lung was entirely collapsed and useless. His feet and ankles were swollen—from continued sitting, it was thought at the time, but more probably from a disturbance in blood circulation. As a substitute for exercise, his limbs were bathed every evening in solutions calculated to produce a healthy reaction of the skin. Up to the very last, however, he was able to shave himself and comb his very ample gray hair.

Edema, or swelling, soon afterward became generalized throughout Jackson's body and finally included his eyelids and face. On May 29, 1845, the dying man could no longer lie down; his nights were spent propped up in bed and his days on the pillowled wheel chair.

At about this time, Captain William Tyack, of the City of New York, made a pilgrimage to the Hermitage, and at the request of his friend, Paul T. E. Hubbles, Esq., also of New York City, he wrote out a diary of the occurrences of the days he spent with General Jackson. When this authentic record of almost the last hours of the General's life was written, Jackson's death did not seem so immediately imminent as it proved, in fact, to be.

A DIARY ABOUT GENERAL JACKSON HERMITAGE, MAY 28th, 1845.

My Dear Sir:

Aware of your desire to know the condition of the patriot of the Hermitage in the closing scenes of his life, I write down, from day to day, during the short visit I make him, what occurs of interest.

On my arrival I found ex-President Jackson more comfortable than he had been, although his disease is not abated, and his long and useful life is rapidly drawing to a close. He had not been in a condition to lie down during the last four months. His feet and legs, his hands and arms are very much swollen with dropsy, which has invaded his whole system. Bandages are drawn tight around the parts most

affected to prevent as much as possible the increase of the swelling [edema—Ed.]. He has scarcely any use of his hands. The bandages are removed several times during the twenty four hours, and the parts rubbed severely to restore animation and the circulation of the blood. He has no strength to stand. His respiration is very short and attended with much difficulty, and the whole progress of the disease accompanied with great suffering. He gets no sleep except by opiates. His left lung was ruptured many years ago, during the Seminole Campaign in Florida [more probably after his duel with Dickinson—Ed.] and is entirely destroyed, the other much diseased. When the dropsy commenced, the cough was extremely severe and expectoration profuse. These symptoms which had continued for years are gradually subsiding and almost entirely ceased. This was followed by loss of appetite and constant nausea and prostration. This change took place early in April; and about the first of May a diarrhoea commenced which seemed to threaten an immediate dissolution. This continued for a few days with great suffering, but fortunately reduced the swelling of the whole system. The abatement of the diarrhoea was succeeded by the swelling in all parts, with violent pains and extreme difficulty of breathing, when nature again would relieve itself as above described.

Thursday, May 29. General Jackson is rather more comfortable having obtained from the opiates some sleep. This day he sat awhile to Mr. Healy, who had been sent by Louis Phillippe (the King of the French) to paint his portrait. Mr. Healy told me that it was the design of the King to place his portrait by the side of Washington which already hangs in his gallery. Mr. Healy is commissioned by the King to paint the portraits of some twelve of the most distinguished revolutionary patriots, to surround those of Washington and Jackson . . . Mr. Healy was enabled to make much progress to-day in his work, and as usual the General received many visitors—more than thirty.

Friday, May 30. The General passed a bad night; no sleep—extremely feeble this morning. Mr. Healy with considerable exertion on the part of the General, was enabled to finish the portrait on which he labored with great care. General Jackson and all his family were highly gratified with its faithfulness. At nine o'clock as is the custom, all the General's family—except the few who take their turn to watch by his side—took leave of him. Each of the family approached him, received their blessing, bid him farewell, kissed him as it would seem an eternal good night—for he would say my work is done for life—after his family retires it is touching to watch this man offer up his prayers etc.—

Saturday, May 31. The General passed a distressed night; no sleep—extreme debility this morning, attended with increased swelling of his abdomen [ascites—Ed.], and all his limbs, and difficulty of breathing. He has no power and is lifted in and out of his sitting posture in bed to the same posture in his chair.

June 1. A part of the family went to church.

June 2. General passed a bad night. No sleep. An evident increase of water on the chest [pleurisy—Ed.]. At 2:00 p.m. his distress became suddenly very great, and the water increasing to an alarming extent. An express was sent to Nashville, twelve miles, for surgical aid. An operation was performed by Dr. Esselman with success; much water was taken from his abdomen, which produced great relief, although extreme prostration.

June 3. Much distress through the night. Opiates were freely administered, but sleep appeared to have passed from him at 10:00 a.m. Drs. Robinson and Walters arrived from Nashville. At 4:00 p.m. I left his house for home.

Yours very truly,

WILLIAM TYACK

Jackson's condition remained the same until June 7 when a definite relapse took place and Dr. Esselman of Nashville remained at the Hermitage all night. Sunday, June 8, 1845, a still, brilliant, hot day, was destined to

be Jackson's last. He was placed as usual in his wheel chair by his two faithful servants, George and Dick. He was deathly pale and soon fainted, but was quickly revived by a dose of brandy. At four-thirty in the afternoon his eyelids closed and his head fell forward. He died without pain at the age of seventy-eight.

An account of Jackson's death was published in the Weekly Union of Washington, D. C., on Monday, June 16, 1845:

THE DEATH OF A GREAT MAN

The death of General Andrew Jackson was announced in this city this morning by the following letter, brought from General Houston to the President by Colonel Eldridge who came express from the Hermitage. On Sunday (8th) the General and his family, who had just arrived at Nashville, set out for the Hermitage to see General Jackson, but did not arrive there until two hours after his death. Colonel Eldridge, hearing of General Jackson's death on the same night, hastened to the Hermitage, where he arrived about 12:00 o'clock. He remained until about 2:00 o'clock in the morning. He was, of course, not long enough at the Hermitage to collect many incidents of General Jackson's last moments. He (Jackson) had been tapped for dropsy a few days before his dissolution, but he had not sufficient strength left to recover from the operation.

The following is a letter written by Sam Houston to President James K. Polk.

Hermitage, June 8, 1845

12:00 o'clock, Nigh

His Excellency James K. Polk.

My dear Sir:

In deep sorrow I address you this hasty note. At 6:00 o'clock this evening General Jackson departed this life. He retained his faculties to the last hour. I lament that I was denied the satisfaction of seeing him in his last moments. I was unfortunately delayed in ascending the Mississippi, so that I did not reach Nashville till half-past six in the evening. I immediately procured a conveyance, and came out with my family—having understood that the General's health was exceedingly precarious, and being anxious to administer, if I could, some comfort in the closing scenes of his eventful life. On my way, a few miles from the city I met the family physician, who informed me that the General was no more.

About three hours before his departure, he conversed for some time with his family, and took an affectionate leave of them, as also of his domestics. His physician represents the scene as most affecting; and remarks that he departed with perfect serenity of mind, and with full faith in the promise of salvation through a Redeemer.

I have seen the corpse since my arrival. The visage is much as it was in life.

The funeral will take place on Tuesday next, at 11 o'clock a.m. A nation will feel this loss, as a nation has received the fruits of his toils during the best years of his life.

Very truly, your friend,
SAM HOUSTON

A tougher piece of manhood than Andrew Jackson never lived. Inheriting a constitution that was never robust, he had been for thirty-one years a diseased man. He survived a terrible gash in his hand and face from the blow of a sword, bullet wounds in arm and chest, and finally attempted assassination. During his youth, he had a severe attack of smallpox which

left scars for life. He went into the Creek War in 1813, wounded and weak from loss of blood, to encounter hardships and privations that were borne with difficulty by strong men in perfect health. The result of years in the army was chronic dysentery and recurrent malaria. Pulmonary tuberculosis had its inception after his marriage to Rachel, in whose family, the Donelsons, it was very prevalent. It seems probable that the bullet wound in his chest might have aggravated an incipient tuberculosis, which in turn may have been complicated by a lung abscess. Throughout his life he was the victim of severe nerve-racking headaches, evidently migraine, and the loss of his teeth and development of cataracts were senile changes which added to his discomfort. As a final blow, he was afflicted with, first, a chronic nephritis (inflammation of the kidney) with generalized edema and albuminuric retinitis which increased his blindness, and secondly, some type of heart disease, probably endocarditis and myocarditis, followed by decompensation. It is possible that before his death tuberculous peritonitis may have developed, although this condition is usually found only in young adults. In general, one may conclude that the primary cause of his death was pulmonary tuberculosis with the contributory factors of chronic nephritis, heart failure, and chest injuries.

Jackson's habits with regard to diet and medicine were not such as would enable ordinary men to make the most of a shattered constitution. He used both coffee and tobacco excessively, the latter of which he both smoked and chewed. He relied upon bleeding to stay his hemorrhage, and calomel to check his diarrhea, both treatments which today would be regarded as homicidal. Jackson's thread of life must have been of the toughest fiber ever woven, to endure, for so many years, the gnawing of such diseases and the corrosion of so much poison.

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Martin Van Buren

1782-1862

WHEN Abraham Van Buren was thirty-nine years old, he astonished all his neighbors by marrying the widow Van Alan, a woman ten years his junior who already had three children. She bore him five children, the third one of whom was Martin Van Buren, who was born on December 5, 1782, at Kinderhook, New York, a little Rip-Van-Winkle village on the east bank of the Hudson River. Van Buren was the first among the Presidents to be born after the Declaration of Independence, and thus was the first President who was an American citizen at birth. Because of his father's Dutch ancestry, Van Buren was also the first President who was not wholly descended from inhabitants of the United Kingdom.

The Van Buren family lived in limited circumstances, and even as a small boy, little Mat, as he was called, had to do odd jobs around his father's tavern in order to attend school. On reaching the age of fourteen, his schooling was ended, and except for the very elementary subjects and some rudiments of Latin, young Martin's formal education was sadly inadequate. His handwriting was terrible and did not improve much with age. A letter which he wrote to President Jackson later in life was almost undecipherable, and Jackson's reply to it had to be based chiefly on guesswork. This incident became a standing joke between the two men, and Van Buren took Jackson's chaffing good-naturedly.

Between the ages of fourteen and twenty-one, Van Buren served a clerkship in the law office of Francis Sylvester, and later practiced law himself. During this time, he was in remarkably good health, and in temperament was described as "immovable, obstinate, and imperturbably good natured." When he was twenty-five years old, he married Hannah Hoes, one year his junior, in the village of Catskill. This was in February, 1807, and shortly thereafter they moved to Hudson, New York, in Columbia County. They had four sons, but while the boys were still little, their mother died, on February 3, 1819, of pulmonary tuberculosis. Van Buren remained a widower for the rest of his life, and it was something of an achievement that he never became involved in any social scandal.

Much more of an achievement was Van Buren's perfect health—this despite the fact that his wife died of pulmonary tuberculosis. He was more than seventy years old before he had a serious illness of any kind—this in spite of a long and active public career during which he served as New York state senator, attorney general of New York State, governor of New York, Secretary of State and later Vice President under President Jackson, and finally, from 1837 to 1841, as President.

If his health was remarkable, however, his personal appearance was not particularly so. Despite his short stature—he stood not more than 5 feet 6 inches—he was very erect and had a courtly manner. He remained slight of figure until late in life, and then became a typical jolly fat man. His long curly yellow hair was parted over the right temple and combed back in wavy masses, hiding his ears but revealing a forehead of extraordinary proportions. Deep-set eyes, big and blue and always laughing, looked with boyish frankness from under heavy eyebrows. His nose was long, with a prominent bridge, and while his upper lip was a perfect cupid's bow, his lower lip had a slight tendency to protrude. The aggressiveness of his jaw was often overlooked because of his ready smile, which sometimes had a wistful turn at the corners. After his retirement, Van Buren became quite bald, but his voice remained strong and clear to the last.

A cheerful disposition was Van Buren's principal asset. His smile and ready wit were dominant both at gatherings in the courtroom and at social functions. Though temperate, he was not averse to a drink or two at the right time, but he never drank enough to lose the caution for which he was noted. The spirit of forgiveness was ever in his heart, both in politics and in his personal relations, but he was never afraid to fight if honor required it. During a heated quarrel with a Senator Poindexter, Van Buren, the Vice President, ascended to the presiding chair, placed two loaded revolvers on the table, and in an unspoken challenge offered to shoot it out.

Van Buren was a born gambler, his bets being placed mainly on the outcomes of elections, although he was also known to put an occasional small stake on the horses. What little recreation he took consisted of fishing for trout near his home town or taking long rides into the country.

One winter day in 1851, Van Buren, who was then sixty-eight and long since retired from the presidency, went for a long walk with his two grandsons, Singleton and Martin III. They were walking along the banks of a creek when suddenly both boys slipped into the icy stream. Their grandfather plunged in after them and quickly brought them to dry land, wrapped them up in his big cape, and carried them home. Considering his age at the time, it is possible that this exposure in icy water and wet clothes may have had some relation to his later development of an inflammation of the upper respiratory tract. At the time, however, all three considered the episode only as a lark.

In 1854, at the age of seventy-one, Van Buren spent some time in Italy, where he wrote his "Political Memoirs." He returned home on the death of his son, Martin, and soon thereafter observed his seventy-second birthday in his native town of Kinderhook. In 1860, Van Buren suffered several attacks of bronchial asthma which culminated in a very severe spell in January, 1861, when he was seventy-eight years old. Up until this time he had had no recorded manifestations of allergy, so his bronchitis was evidently of infectious rather than allergic origin. Again in January, 1862, a recurrent attack put him to bed, and this time he suffered greatly from pain and labored breathing. His physicians now made a diagnosis of "malig-

nant catarrh," evidently realizing the seriousness of the attack and the nature of its eventual outcome. All physical exertion was absolutely forbidden, and he was given astringent inhalations.

As soon as he was able, Van Buren was moved to New York City and placed under the care of Dr. Alonzo Clark, one of the foremost physicians of the day. He remained there until late in May of 1862, and when he finally returned to Kinderhook he took great delight in seeing that all the fields were in cultivation and the foliage green and fresh. The remainder of his life—the months of June and July—were spent in a second-floor bedroom of the Van Ness home, called Lindenwald. When able, he was placed in a chintz-covered chair where he could view the outside surroundings, but even this exertion became too much for him.

On July 15, when his mind began to wander and he talked of irrelevant things, his two sons were sent for. This was the beginning of senile cerebral changes, doubtless the result of general arteriosclerosis. On July 21, he became unconscious and slightly cyanotic (bluish) when the right side of his heart, which had carried a big load trying to pump blood through congested and infected lungs, finally failed. He died very quietly at nine o'clock Thursday morning, July 24, 1862, at the age of seventy-nine years, seven months and nineteen days. The cause of his death was heart failure, with bronchial asthma as a very important contributory factor. Like so many of the Presidents who lived to a ripe old age, arteriosclerosis undoubtedly played an important part in the final decline of his health.

During the last few days of Van Buren's life, a close friend paid him tribute as a man who never grew bitter over defeat, who never lost his rare ability to work with men, nor his even rarer ability to judge his opponent fairly. This talent of Van Buren's for sailing through life on an even keel undoubtedly helped him to avoid the rough weather of sickness and to make his journey a long and peaceful one.

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William Henry Harrison

1773-1841

WILLIAM Henry Harrison was born to one of the first families of Virginia in a manor house on the banks of the James River in the town of Berkeley, Charles County, Virginia, on February 9, 1773. As a son of Benjamin Harrison, signer of the Declaration of Independence, with the blood of Pocahontas in his veins, and as a descendant of a Cromwellian colonel who had signed the death warrant of a king, he had a historic lineage that no President has surpassed.

Harrison received a classical education at Hampden-Sidney College, Virginia, where he was a student from 1787 to 1790. At the conclusion of his courses there, he decided to study medicine with Dr. Rush, a personal friend of the family, in the College of Physicians and Surgeons at Philadelphia. Apparently he was not in medical school for very long, however, for in August, 1791, he entered the army as an ensign in the First Regiment at Fort Washington, Cincinnati.

Later, while governor of the Territory of Indiana, Harrison instituted several reforms among the Indians. Two of the most important of these were prevention of the sale of intoxicating liquors and the introduction of inoculation for smallpox. It was at this period of his life that he almost met death from a bullet fired by an Indian. Harrison was sitting in his living room at the White House of the Old Northwest in Vincennes, Indiana, and holding his infant son, John Scott Harrison, in his arms, when an Indian skulking outside of the house shot through the shutters of the living room window. The bullet missed its mark, imbedding itself in the wall on the opposite side of the room. This fortunate miss saved for the country not one future President but two, for Harrison's young son was to be the father of another President, Benjamin Harrison. Seldom has a single shot carried such potential power to change the course of our political history.

Harrison was essentially an outdoor man even though he never had a very rugged constitution. His career as a soldier, fighting both the Indians and later the British during the War of 1812, undoubtedly increased not only his public esteem but also his familiarity with and taste for the outdoor life. Horseback riding was a favorite recreation of his, and he always had a very fine saddle horse at his command. His army life quite probably had its deleterious effects as well, however, and during the months of February and March in 1832, when he was fifty-nine, Harrison had a protracted spell of "ague and fever." This disease, which was probably

malaria, was particularly severe, keeping him in bed for six to eight weeks. In the last part of March, there was a big flood of the Miami and Ohio Rivers which carried away much property and livestock. Although he was not entirely recovered, Harrison went out with his neighbors to restore and rebuild the farms as much as possible, but in doing so he suffered a severe relapse. It was not until the last of April that he felt well enough to accept an appointment on the Board of Visitors attending the June examinations to West Point. In early 1834 he wrote a friend, Senator Tipton, that he had been in good health for an old man and that his constitution seemed suited to exposure and hardship. Nevertheless, a short time afterward, in February, 1834, he suffered a recurrence of his ague and fever.

There is nothing particularly significant in Harrison's medical history after his attack of malaria until the day of his inauguration as President on March 4, 1841, probably one of the coldest inaugural days in history. During his inaugural address, which lasted one hour and forty-five minutes and was the longest on record, Harrison faced a cold north wind with no hat, overcoat, or gloves. On this occasion, as on many others, he refused to take any precautions against exposure to the weather, and in consequence he contracted a heavy cold in his chest.

This cold subsided somewhat during the ensuing days, but on March 26 Dr. Thomas Miller was called in at about five o'clock in the evening. Dr. Miller found the President ailing but not actually confined to bed. Harrison complained of having been somewhat indisposed for several days, a result, he thought, of the great fatigue and mental anxiety he had undergone; but he had taken medicine, had been on a diet, and believed he would soon be well again. He had called Dr. Miller not to prescribe for him, since Harrison was his own physician in minor ailments, but to discuss some of the peculiarities of his constitution of which he thought it important that his physician be aware. Harrison mentioned his liability to neuralgia, which affected his head, stomach, and often his extremities, and the fact that he had been since early in life a martyr to dyspepsia. He had avoided the dyspepsia almost entirely during the preceding few years by a system of diet, confining himself principally to animal food, but in the last few days it had returned, and in an attempt to cure it he had been starving himself. Because of chronic constipation, he had formed the habit of using cathartics very liberally. He further stated that he attributed his good health during the last few years to the fact that he went to bed early and arose very early in the morning.

Dr. Miller prescribed no medicine at this interview, but told the President to avoid all excitement, to relax completely, to omit all official business, and to stay in bed until the next morning. Bleeding was not resorted to because of his age, but he was extensively cupped. When Dr. Miller stopped in later in the evening, Harrison was in the parlor chatting with some military friends. He was feeling much better, and thought he would have a good night and be well by morning. He seemed to be very cheerful and took a leading part in the conversation.

On the following day, however, Saturday, March 27, at about one o'clock in the afternoon, Harrison had a severe chill lasting about fifteen minutes. He had not followed his physician's direction but had taken a walk on the grounds, escorting a visitor to the gate, and had made an early morning visit to the market to purchase provisions. He had attended to other routine business as well, and the chill had attacked him while he was engaged with his Cabinet. He was put to bed immediately after the chill and given attentive nursing care.

When Harrison awoke on Sunday, March 28, his face was flushed with fever, and he kept drinking a great deal of water to "keep up his strength." A definite diagnosis of pneumonia, complicated by an intestinal inflammation, was made on March 29. Evidently the liver was involved as well, because Harrison became jaundiced before death. He made no response to medical treatment and grew steadily worse until delirium set in several hours before his death.

During his last few hours the medical treatment administered by his five attending physicians consisted of "topical depletion, blistering and appropriate internal remedies which subdued in a great measure the disease in his lungs and liver, but the stomach and intestines did not regain a healthy condition." He died at 12:30 a.m., April 4, 1841, at the age of sixty-eight after serving only one month of his term as President. He was the first President to die in office.

A review of Harrison's case today would indicate that the disease was not a typical pneumonia, although the term "pneumonia" was used by his physicians, probably because it afforded a succinct and comprehensible answer to the innumerable questions of the public as to the nature of Harrison's illness. The disease was, in fact, one of our ordinary winter fevers of a low grade, of which pulmonary inflammation, hepatic congestion, and subsequent gastrointestinal irritation were the prominent symptoms, and, apart from the distinction of its subject, presents but few points of medical interest. Today it might be classified under the heading of virus pneumonia. More detailed information about its specific nature might have been obtained by a post-mortem examination, but, unfortunately, all efforts at the time to obtain such an examination were unsuccessful.

No one could have been less prepared to resist such an illness than General Harrison. In early life his constitution had been impaired by hardships and exposure, and in later years by dyspepsia and neuralgia. Exercise, regular hours, simple diet, and mental quietude had preserved for many years a frame which was by no means robust; but the change which occurred in all of Harrison's habits, in consequence of his political relations and the fatigues and anxieties incident to his official duties after his arrival in Washington, tended to interrupt and disturb the repose of body and mind necessary for lasting health. His every hour was devoted to the reception of company, particularly the hordes of office-seekers who besieged him, or to the transaction of important business of all kinds. Not only were his physical and mental energies strained to the utmost, but his personal feel-

ings as well were often subjected to the severest trials. Under these circumstances, the fatal result of his illness is a matter not so much of surprise as of regret.

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John Tyler

1790-1862

JOHN Tyler was the first President who was not elected to the office. Upon Harrison's death, Tyler, who was then Vice President, succeeded him and fell heir to the position of target for all the many political quarrels and attacks of the time. Although he executed his duties faithfully and well, he was never an outstanding statesman, and similarly, his personal life and medical history seem to be notable chiefly for their lack of dramatic highlights.

John Tyler was born on an estate called Greenway in Charles City County, Virginia, on March 29, 1790. He was the sixth child and second son born to Judge John Tyler and Mary Armstead Tyler. His mother died when he was seven years old, and he was brought up under the careful guidance of his father. As a boy, he was very slender, with a thin Roman nose, silky brown hair, blue eyes, and a ready smile and laugh. He inherited the smoothness and gentleness of character of his mother rather than the sterner qualities of his father. Young John had a rather uneventful boyhood, and the records make little mention of either childhood sickness or youthful escapades. He was considered a precocious child, growing up very rapidly and maturing early, and in the opinion of some, these characteristics did not make for great permanent strength, breadth, or stability of mind. When he was twelve, he entered grammar school—equivalent to high school today—and in 1807 graduated from William and Mary College at the age of seventeen.

On his twenty-third birthday, Tyler was married to Miss Letitia Christian. They had nine children, two of whom died in infancy. In later years, during the time they lived in the White House, Mrs. Tyler became an invalid as a result of a cerebral hemorrhage, or apoplexy, and she died there following another attack on September 10, 1842.

The first illness in Tyler's life of which any mention is made occurred while he was a congressman. After eating at a second-rate boarding-house, he had a very severe attack of nausea, vomiting, and diarrhea which he attributed to eating some stale fish. It seems probable, however, that this was the initial attack of a gastrointestinal infection which recurred at intervals for the rest of his life. It was probably either amebic dysentery or typhoid fever, and this first illness caused Tyler's retirement for almost two years.

Tyler's health and life were almost threatened again some years later when he narrowly escaped death in the explosion of a large gun on the

battleship *Princeton*. Several of his friends were killed, including the Secretaries of State and the Navy, and Tyler himself escaped injury only because he had been detained on the deck below to answer a toast from the ladies present.

It might be mentioned that a Vice President who succeeded a President by death has himself never died in office. But this almost happened at the time of Tyler's near-accident. The Presidential Act of 1886 now provides a direct line of succession beginning with the Secretary of State assuming the office after the Vice President.

On June 26, 1844, during the last year of his presidential term, Tyler, at the age of fifty-four, was married again, this time to Julia Gardiner of New York who was twenty years old. They had seven children. After leaving office Tyler retired with his family to his estate, Sherwood Forest. During this period Tyler was sick a good deal of the time. There were many recurrences of his gastrointestinal attacks, and these left him considerably weakened. Frequent colds, gradually developing into severe attacks of bronchitis, laid him up for weeks at a time and were complicated by a very distressing cough. Cough mixtures and "stomach remedies" were always in the house, and Mrs. Tyler frequently had what amounted to a small hospital on her hands, what with her ailing husband and the usual childhood diseases of her seven children.

In middle adult life, Tyler was considered a very handsome man. He was about six feet tall, quite slender, clean shaven, and light complexioned. His head was rather narrow, his forehead high and prominent, and he still had the aquiline nose and bright blue eyes of his boyhood. The only changes in his appearance later in life were a graying of his hair and a stooping of the shoulders. His recreations were riding, hunting, and fishing, and he was particularly fond of horses. When notified that he was to be the next President, Tyler was playing marbles with his sons.

After his retirement, Tyler was very solicitous about the health of his slaves. His standard treatment for their chills and fevers was quinine and a dram of whisky, a remedy that undoubtedly added to his popularity with the help. In a letter to his son, Robert Tyler, written in April, 1850, he cautioned him to wear heavy garments and keep his feet dry, for he had found by experience that those measures provided certain protection against colds, rheumatism, and catarrh. In letters to his wife, Tyler warned her not to let their children be exposed unduly to inclement weather and to watch over them carefully.

In November, 1861, ex-President Tyler was elected a Representative of the State of Virginia to the Confederate Congress. He never lived to take his seat in this assembly. On January 10, 1862, Mrs. Tyler joined her husband at the Exchange Hotel in Richmond one week earlier than she had anticipated because she had had a premonition in a dream that his health had or was going to suffer seriously. She found Mr. Tyler in good condition. On the following morning, however, he felt somewhat indisposed and went down to the hotel dining room for a cup of hot tea. As he arose from the

table, he suddenly fell to the floor unconscious. He was carried to a sofa in an adjoining room, but soon recovered and was able to walk back to his hotel room. Because Tyler had suffered frequent spells of dizziness in the past, this attack was not considered serious, and the physicians in attendance, Drs. Brown, Crockett, Fairfax, and Miller, made a diagnosis of biliousness combined with bronchitis. In actual fact, however, this spell was caused by a slight cerebral hemorrhage, and Tyler's vomiting of bile—what the doctors called biliousness—and falling unconscious are typical symptoms of apoplexy and definitely verify the nature of the attack.

From this time on, Tyler was confined to bed, although he was mentally alert and received several visitors. On Friday night, January 17, he had another stroke, and at 12:15 in the morning of January 18, 1862, he died at the age of seventy-one. Present at the time of his death were Drs. Brown, Peachy, and Miller, and also Josiah C. Wilson, Mr. and Mrs. Ballard, and Mrs. Tyler and her youngest child.

Tyler's death was caused by two cerebral hemorrhages, the first being a small one, probably located in a so-called silent area of the brain, which gave the effect of a blow on the head. This was followed by a larger hemorrhage which was the primary cause of death. Contributing causes were chronic bronchitis and dysentery.

Mrs. Tyler's account of her husband's last days, beginning the morning after her arrival at the Exchange Hotel, gives a moving and intimate picture of John Tyler's final illness:

The next morning, January 12, 1862, when I awoke, quite early, I observed him standing before the fire nearly dressed. Then he said: "Your dream now is out, for I believe I have had a chill, and I have determined to go down to the breakfast table and take a cup of hot tea." I begged he would have it sent for, and lie down again; but he preferred to go for it, and so I, not thinking his illness was serious, remained. . . . I was aroused by the entrance of the President returning, and alarmed to see him with collar open, and cravat in hand. He exclaimed, "I would not have had it happen for a great deal; it will be all around the town!" and then went on to tell me he had risen to leave the table, staggered, and fell. He was lifted and carried to the parlor, where, lying on the sofa, he recovered consciousness, and then insisted upon coming alone to his room, lest I should be alarmed. His friends began surging into the room before I could rise to attend him. They were very solicitous, and extended him on the sofa; but he assured them he was better and would send for his doctor. . . . Dr. Peachy arrived, and pronounced his case a bilious attack, united with bronchitis, as he was soon troubled with a cough. He did not take to his bed entirely, and desired to receive and converse with his friends who called upon him; but as his symptoms did not improve, and he had much headache, his physician insisted he should go home and have perfect quiet for a few days, for his mind was constantly exercised over the situation of the country, and he could talk of little else, except to express such tender love and anxiety for his family. The doctor gave him a morphine mixture for his cough, which soothed it, but caused him to make wandering remarks when half asleep. . . . On Friday night, just after he had retired to bed, expressing the hope that he was better, and would have a good sleep, and had slept for an hour, he suddenly awoke with a feeling of suffocation, which immediately aroused me. Robert Tyler, who had determined to spend the night, and be of any assistance if needed, and had arranged himself to sleep upon the sofa, hastened for Dr. Brown, whose room was upon the same floor. . . . I bathed his head and chest with spirits, while the nurse hushed the little one. Dr. Brown came in

without delay, and prescribed mustard-plasters and brandy. The President said, "Doctor, I think you are mistaken," but took the stimulant. Dr. Peachy entered, to whom he said: "Doctor, I am going." Dr. Peachy answered: "I hope not, sir." The President added: "Perhaps it is best." I held again the stimulant to his lips; his teeth chattered on the glass; he looked forward with a radiant expression, as if he saw something to surprise and please him, and then, as if falling asleep, was gone.*

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*Mrs. Pearl Tyler Ellis, youngest and only surviving daughter of President and Mrs. Tyler, died at the house of a daughter, Mrs. Ambrose M. Marye, of Elliston, Virginia, on July 1, 1947.

James Knox Polk

1795-1849

JAMES Knox Polk was born on November 2, 1795, in Mecklenburg County, North Carolina, the same section where Andrew Jackson had been born twenty-eight years earlier. His parents, Samuel Polk and Jane Knox, were of Scotch-Irish ancestry. They had ten children, six sons and four daughters, James being the oldest. As a boy, James was rather small for his age and very frail looking, and when he was eleven years old, his father decided that outdoor life would build him up. The hardships of vigorous living soon sapped his strength, however, and following a siege of sickness, he was placed instead in school, where he made a name for himself as a bright, punctual, and industrious student. He went into politics early in life, and one of the first laws he helped to enact was one against the then common practice of duelling. He himself was never concerned in an "affair of honor," either as principal or second. In almost every way he seemed the opposite of his friend and predecessor, Andrew Jackson, yet he inherited from Jackson the nickname, "Young Hickory."

On January 1, 1824, when he was twenty-nine years old, Polk married Sarah Childress of Rutherford County. They had no children. By this time he was well established in business, in reputation, and in character. His private life was upright and blameless. He never drank or used tobacco in any form, and he found his greatest happiness in the pleasures of the home circle rather than in the gay round of public amusements. In the words of Vice President Dallas, he was "temperate but not unsocial, industrious but accessible, punctual but patient, moral without austerity, and devotional though not bigoted." His personal appearance was that of a serious, brown-eyed man of medium height and frail physique, with prematurely gray hair which he always wore long. He was the slenderest of the Presidents, and like Coolidge in later days, was calm and unemotional in temperament.

Polk was the first "dark horse" to win the Presidential race, and was also the only man, with the sole exception of Wilson in 1916, to be elected without the vote of his own state. At the time of his election, Polk was younger than any preceding occupant of the office, being only forty-nine years old. His four-year term of office aged him a great deal in appearance, however, and by the end of the term, his haggard look, "venerable appearance," and flowing gray locks made him look a much older man than he really was.

Except for an occasional intestinal upset there is no history of illness

through Polk's early and middle life. From 1845 to 1849, however, while Polk was President, he was sickly a good share of the time, and the following entries from his personal diary reveal how frequently ill health dragged him down.

"Friday, August 21st, 1846. Almost overcome by heat several times during the day and greatly fatigued from walking. On returning to Fortress Monroe in the evening was greatly fatigued and perfectly wet with perspiration. Very happy to get to my quarters for repose and rest. Spent a restless and uncomfortable night, sleeping but little."

"Saturday, August 22nd, 1846. I rose this morning feeling quite unwell. My stomach was deranged and I felt a soreness and aching in my limbs. This was caused by the exercise and fatigue of yesterday which was one of the hottest days I ever felt. Was able to sit at the table but eat nothing."

"August 23rd, 24th, 1846. Much improved but still not fully recovered."

"Saturday, September 25th, 1847. About the time the Cabinet retired (between 2 & 3 p.m.) I felt symptoms of a chill. It was not severe, but I had some fever after it was over and spent an uncomfortable and restless night. The day being chilly was uncertain whether it was a regular attack of chills and fever or the effects of a change in the weather. I took some simple medicine and will wait for a second chill before sending for the doctor."

"Monday, September 27th, 1847. Had a chill at 10:00 a.m. lasting two or three hours and followed by a high fever. Dr. Hall came at 2:00 p.m. and prescribed. Dr. Miller was called in consultation during the evening. Spent a restless night."

"Tuesday, September 28th, 1847. I was under the operation of medicine [probably calomel] and was quite unwell. The physicians called and made a further prescription. Another chill at 4:00 p.m. Much fever and spent a bad night."

"Sunday, October 3rd, 1847. Bedridden five days. Fever now gone. No chills."

"Friday, October 8th, 1847. Mrs. Polk has fever and chills. Very sick. Dr. Hall called."

"Wednesday, June 7th, 1848. Indisposed. Took medicine prescribed by Dr. Hall."

"Saturday, June 10th, 1848. Quite unwell again and took medicine prescribed by Dr. Hall."

"Monday, June 12th, 1848. Still indisposed. Greatly fatigued by demands on my time."

"Friday, June 16th, 1848. At 1:00 p.m. had a severe chill followed by high fever. Dr. Hall called and prescribed some medicine. Able to entertain guests in the evening."

"Saturday, June 17th, 1848. Another chill and fever beginning at 1:00 p.m. Dr. Hall called and prescribed. Spent a restless and uncomfortable night."

"Tuesday, June 20th, 1848. Still too feeble and too unwell to entertain visitors, but no chill."

"Thursday, June 29th, 1848. Before sunrise this morning was taken with a violent diarrhea accompanied by severe pain. I was soon prostrated by it. I took medicine prescribed by Dr. Hall and remained in my chamber during the day."

"Friday, June 30th, 1848. Still confined to my quarters, very fatigued and exhausted."

"Sunday, July 2nd, 1848. Recovered enough to attend church with Mrs. Polk. Spent the rest of the day in my chambers."

Polk's frequent mention of attacks of chills and fever is definite evidence that he was suffering mainly from malaria, while the gastrointestinal upsets and recurrent spells of diarrhea were undoubtedly attacks of the dysentery

which was so prevalent at the time. Two factors led to Polk's tremendous loss of vitality during this period: first, the frequently recurring illnesses, and second, the numerous details and cares of public office to which he devoted himself unstintingly. On leaving the presidency, however, he took with him an ample fortune, a choice library, a cultivated mind, and domestic ties of the dearest nature; and it seemed as though long years of tranquillity and happiness should lie before him.

On the evening of March 5, 1849, the day after his term expired, he boarded a steamboat for his homeward journey. In response to invitations, he traveled via Richmond, Charleston, and New Orleans. Going north from New Orleans, Polk first noticed the premonitory symptoms of what was diagnosed as cholera. He suffered considerably from diarrhea, but the use of medicine and a proper attention to his diet and bowels checked the attack, and it seemed to pass off entirely, apparently leaving him in good health. He was somewhat enervated, however, by the fatigue of his long journey and the acknowledgment of the kind civilities extended to him, and when he arrived home at Nashville his whole system was enfeebled.

The next day being rainy, he remained indoors and began to arrange his large library. The labor of reaching books from the floor and placing them on the shelves exhausted him and brought on a slight fever. By the next day his chronic diarrhea returned, a complaint that had plagued him for many years and was readily induced in his system by any overexertion.

For the next three days, his friends felt no alarm. But the disease was baffling the skill of his physicians, and Dr. Hay, Polk's brother-in-law and their family physician for twenty years, was finally sent for from Columbia. The skill and experience of this gentleman, aided by the highest medical talent, proved of no avail, however, and Polk continued to sink from day to day. The disease was checked four days before his death, but his constitution was so weakened that he had not enough recuperative energy left for a healthy reaction. He failed so slowly and insensibly that the heavy respirations that usually just precede death commenced eight hours before he actually died. He died without a struggle, simply ceasing to breathe, as when deep and quiet sleep falls upon a weary man. His death occurred on June 15, 1849, at the age of fifty-three years, less than fifteen weeks after the expiration of his term as President.

Even after Polk's death, both his physicians and the public seemed uncertain as to the exact nature of his illness. A newspaper report written June 23, 1849, stated that:

"By the latest accounts, we have learned that he [Polk] was suffering from a bilious attack, attended by severe diarrhoea, and not cholera as first reported. An attack of this kind, falling upon one not of strong constitution, and beyond question enfeebled by the harassing cares and intense labors of a most important and eventful term of office, found, in all probability, a predisposed victim to its prostrating influence."

Reviewing the case in perspective, however, one may conclude that the true primary cause of Polk's death was amebic dysentery. Contributing

factors were the frequent attacks of malaria from which he had suffered for several years, and possibly cholera, although there is a good deal of doubt as to the correctness of the latter diagnosis. No mention was made of the medicines which Dr. Hay prescribed, but quinine was probably given for the malaria and calomel for the attacks of dysentery. Again, here is evidence of the tragic inadequacy of early American medical diagnosis and treatment. One cannot help but believe that modern medicine would have enabled Polk to lead a much longer and healthier life.

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Zachary Taylor

1784-1850

THE legend that Zachary Taylor's death was caused by eating too many cherries is one of those anecdotes that have caught people's fancy and become part of the fascinating apocrypha of the history of our country. Actually, Taylor died of a scientifically definable disease, and his cherry-eating may or may not have had a direct effect upon it. Nevertheless, the idea that Taylor, a rough tough man of the West who spent a half a lifetime in active army service, should meet his death in this fashion has an ironic incongruity that may account for the persistence of the story.

In any case, the picture of Zachary Taylor as a fighter, schooled in hardship and peril, remains a true one, founded on the basic facts of his life. Born on November 24, 1784, in Orange County, Virginia, the third child of Colonel and Mrs. Richard Taylor, young Taylor was brought up in the wilderness amid its constant dangers. During his boyhood, fishing and hunting were his main pastimes, and he was known for his courageous and adventurous exploits. One day in March, when he was seventeen years old, he swam across the Ohio River from the Kentucky to the Indiana side while the river was still filled with floating ice. He was already considered a quick, bold, hardy, clear-headed young man, and during the rest of his life these traits remained outstanding in his character.

At the age of twenty-three, Taylor entered the army and subsequently fought the Indians both along the Wabash River and in Florida. Later he participated in the Black Hawk and Seminole Wars, and he rose to the rank of major-general, high in popular esteem, when he defeated the Mexicans at the Rio Grande. He never looked the professional military man, however, but remained an untidy, shabbily dressed soldier whose careless habits and willingness to fight gave him the nickname "Old Rough and Ready."

During all these years he lived at various times in Kentucky, Wisconsin, and Florida, finally settling in Louisiana on a large cotton plantation. In 1810, at the age of twenty-six, he had married Miss Margaret Smith of Maryland, and thereafter she followed him on his army expeditions, living with her husband among the Indians and in army tents and barracks like a true soldier. In the course of the years they had six children, one son and five daughters, many of whom were born under the most primitive circumstances.

Taylor's medical history during the many years of his war career is surprisingly uneventful. At his first station as a lieutenant at Fort Pickering—

at the site of which today stands the modern city of Memphis—disease was rampant, and absolutely no attempt at sanitation was made for either the sick or the well. At this camp in the spring of 1810, Taylor suffered from diarrhea and dysentery so severe that a few months later he was sent home to recuperate. In 1812, while at Camp Harrison, Taylor, who was now a captain, suffered from "a very severe attack of the fever." This also resulted in a sick leave, which was spent in Louisville. The records show no further illnesses of Taylor's until April, 1832, when he was again very sick, probably from a recurrence of intestinal infection.

While at Tampa during his campaign in Florida in 1839, Taylor again fell victim to "the fever . . . which confined me to my bed for near two weeks, when so many was dying around me who I could render no service nor even pay a friendly visit. . . . But after taking a large quantity of active medicine principally calomel, and living altogether on hot drinks the disease was subdued, but left me very much debilitated."

Taylor's utter ignorance of sanitation was especially evident when his army was in camp at Corpus Christi in 1845. Diarrhea and dysentery kept an average of 10 per cent of the officers and 13 per cent of the men bed-ridden for months, although fortunately there were few deaths. Taylor evidently did not take even the crude precautions against disease and epidemics that were, even by that time, the usual practice among army leaders. At one time he wrote to his daughter that homesickness, too, was a principal disease among the officers. During this period with the army in Texas and Mexico, Taylor himself suffered only one more short spell of fever, occurring in 1845.

Throughout all his campaigning on the frontiers and in Mexico, and in spite of the many times that Taylor exposed himself needlessly to enemy fire, on only one recorded occasion (*Zachary Taylor*, by Holman Hamilton) was he struck by a bullet:

"One ball passed through his left sleeve above the elbow in the part between the arm and the body, making a large hole where it went in and where it went out. . . It cut through both of his shirts and grazed the skin of his arm. Another entered the breast of his coat, cut through the lining for several inches, and came out at the button hole, tearing it away."

In 1848, after the end of the Mexican War, Taylor, who had become a popular hero, was elected President. Then, at sixty-three, he was a heavy-set man, even fat, weighing about 200 pounds and standing 5 feet 8 inches in his stocking feet. He was somewhat stoop-shouldered and had remarkably short legs in comparison with the length of his body, so that when he was sitting down he appeared to be much taller than he actually was. He had a fine head, high forehead, penetrating and rather deep-set blue eyes, and firmly compressed lips. His nose and chin were quite prominent, and his brown hair had become white during his war years. Because of an eye-muscle imbalance called divergent strabismus, Taylor, when speaking to anyone quite close to him, had the habit of partly closing one eye, thus submerging the image of his deviating eye.

On July 4, 1850, sixteen months after his inauguration, President Taylor with his family and a group of friends attended the celebration of the anniversary of American Independence held by the Washington National Monument Association. Taylor was apparently in excellent health and in as fine spirits as he had exhibited for months. While there, he did considerable walking and was exposed to the sun for several hours. It was a very hot day, and to quench his thirst he drank large quantities of water. On arriving home, he felt very hungry and indulged freely in cherries and other fruit which he washed down with a good deal of iced milk and water.

At the usual hour, probably about six o'clock, he sat down to dinner; and at this meal he seemed to have an abnormal appetite for fruit, eating cherries again. The family physician, Dr. Weatherspoon, who was sitting with him, warned him against this evident imprudence, as he suspected that the President was already not well. This warning was of no avail, however, and about an hour after dinner Taylor became violently ill. Painful cramps were the first really dangerous symptoms, and a severe attack of diarrhea soon followed. The doctor advised the usual remedies, but the President was loath to take them, believing that a man as strong as he was could do without medicine. He was sure that his attack resulted from eating too much fruit and would soon pass away. Even his family physician believed at first that his strong constitution and superb physique would overcome the temporary disability.

But by eleven o'clock that night the terrible pain had increased, and the diarrhea would not yield to treatment. Taylor's family and physician were already very alarmed as to the outcome of the attack unless some extraordinary remedy could be made to produce a reaction. Substantially the same symptoms, abating only at intervals, continued up to the close of July 6. Then Dr. Weatherspoon, the trusted family physician, invited Drs. Coolidge and Hall, of Washington, for consultation; these three then sent for another eminent practitioner, Dr. Wood of Baltimore, who specialized in this type of disease.

As these able men gathered about Taylor's sickbed, they shook their heads to each other, although they spoke hopefully to the family; for already this attack, very much like Asiatic cholera, had reduced the strong man to a state of great disability and weakness. Soon, however, his condition appeared more favorable. The doctors seemed to be getting the mastery of the disease. But the improvement was only temporary, and, not surprisingly, a remittent fever with typhoid or typhus symptoms then appeared. Taylor had scarcely had strength enough to resist the first attack, and at this second, less virulent but more insidious stage of the disease, everybody recognized that his life was in imminent peril.

On July 8 Taylor's physical symptoms were complicated by acute mental distress. Throughout his administration he had felt keenly the hostile attitude of many people who misconstrued his motives and made brutal insinuations concerning his feelings on the slavery question, and these worries now preyed on his mind. In the evening of the 8th, his diarrhea subsided, but severe and frequent vomiting set in. This vomiting eventually brought up

only greenish watery fluid. No hope was held for him that night, and everyone was merely waiting for the end.

On July 9 at 4:00 p.m. his vomiting ceased entirely, as did the pain in his chest, but the physicians refused to give any more medication, considering the case hopeless. At 8:00 p.m. congestion of the brain and stomach began, and shortly thereafter Dr. Weatherspoon administered a stimulant. Again bile was vomited at short intervals, but death finally came at 10:35 p.m., July 9, 1850.

Zachary Taylor, sixty-five years old and a fighter all his life, died without a struggle. His last words were, "I have endeavored to do my duty. I am prepared to die. My only regret is in leaving behind me the friends I love."

In reviewing Taylor's life, it is significant that despite the fact that he spent practically all of his adult years in the army, he was never seriously wounded. His only ailments were those resulting from the intestinal infections so prevalent in army life, and this fact may have some bearing on his final illness. Two factors concerning his last few days stand out prominently. The first is the exposure to extreme heat and humidity on that Fourth of July. Many of his symptoms, especially the fever, prostration, and vomiting, were pathognomonic of heat prostration. The second factor is the extreme irritability of his entire gastrointestinal tract, which may have been an acute exacerbation of his chronic intestinal infection or even an acute typhus or typhoid type of infection. Another complicating circumstance was his severe mental and emotional distress caused by his inability to cope with the numerous demands made by friends and office seekers.

The report of one of the physicians, probably a dissenter from the majority opinion, stated that President Taylor did not suffer from dysentery or any bowel complaint, but that he had a violent attack of "biliary remittant fever," which now would be considered either an acute hepatitis or cholecystitis (liver or gall-bladder inflammation). No post mortem was performed, however, and no definite proof as to the nature of the disease is obtainable. Taking everything into consideration, it seems most probable that the primary cause of Taylor's death was an intestinal infection (*cholera morbus*), with heat prostration as a contributing condition.

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Millard Fillmore

1800-1874

MILLARD Fillmore was born at Summer Hill, in the town of Locke in Cayuga County, New York, on January 7, 1800. He was the second child and oldest son of Nathaniel Fillmore and Phoebe Millard Fillmore. As a boy, young Millard was intensely fond of hunting and fishing, but because of his father's objection to firearms he was able to hunt only when he could borrow a gun from the neighbors. He was very large for his age and unusually strong for a young fellow. In the fall of 1814, when he was less than fifteen years old, he was offered a very liberal sum to serve as a substitute for a drafted man, but his father persuaded him to abandon the idea of being a soldier. During most of his early youth, Fillmore's diet consisted mainly of milk and bread, which he ate three times a day. This diet, plus lots of outdoor exercise and work, was undoubtedly responsible in part for the wonderful constitution and digestive powers which enabled him to remain in good health during his entire life.

In the prime of life, Fillmore cut a striking figure. He was a large and finely built man, 5 feet 11 inches tall, with a light complexion, blue eyes, broad forehead, and a handsome Grecian mouth. With the possible exception of Harding, Fillmore is considered the best-looking of our Presidents.

The first romance in his life was his love for Abigail Powers, the village school teacher whom he married on February 5, 1826. They had two children, Mary Abigail, a gifted daughter who died of cholera on July 26, 1854, and an eccentric son who lived for many years after the death of his father and who for some unknown reason destroyed many of the President's official papers.

When General Taylor died in 1850, Fillmore, who was then fifty years old, succeeded him as President. Fillmore was the first President to install a bathtub—one made of sheets of metal—and a kitchen range in the White House, which was left in a very unsanitary condition by the Taylors. Mrs. Fillmore was never very well during her husband's term of office, and while attending the inaugural services of President Pierce she caught a severe cold. Three weeks later, on March 30, 1853, she died of pneumonia. In 1858, Fillmore was married again, this time to Caroline Carmichael McIntosh, a widow. They had no children, and she survived her husband by seven years.

Throughout his entire life Fillmore enjoyed remarkably good health which continued unbroken until a few weeks before his death. On the morning of February 13, 1874, just after he had finished shaving, his left hand suddenly dropped powerless to his side and lost both sensation and the

power of motion. The paralysis soon extended to the left side of his face and then to the muscles of his larynx and those governing the power of swallowing. From these symptoms it seems evident that he was suffering from bulbar paralysis resulting from a hemorrhage in the part of the brain called the medulla.

Under the efficient care of his friend and family physician, Dr. James P. White, the paralyzed parts seemed to be partially restored to function, but about two weeks later he had another stroke. Dr. White then called Dr. Gray of Utica in consultation. The paralysis now extended to the lower part of Fillmore's body and he was unable to walk or even get out of bed. This second attack took place Thursday, February 26, and soon after it occurred he was given stimulants—probably sips of brandy or whisky at frequent intervals—and hot packs were applied to the paralysed muscles.

Fillmore was unconscious for twenty-four hours after this second stroke but continued to respond very sluggishly for several days. He was never again able to leave his bed, however, and on March 7 he began to sink quite rapidly. That night he tossed about a good deal and continued restless until morning. On the next day, his last, he came out of his stupor long enough to sip some liquid food at 8:00 p.m. This was managed only with difficulty because of the partial paralysis of his swallowing muscles. At this time he was also able to say a few words, but one hour later he lost his power of speech and became unconscious. He died at 11:10 p.m. that night, March 8, 1874, at the age of seventy-four.

An original newspaper account gives the following report: "Millard Fillmore's death was calm and without pain, notwithstanding that during the week preceding final dissolution he had suffered intensely." Because of the peculiar distribution of the paralyzed muscles there seems no question but that Fillmore's death was caused by a bulbar hemorrhage.

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Franklin Pierce

1804-1869

FRANKLIN Pierce was born November 23, 1804, in the little town of Hillsborough, New Hampshire, about eighteen miles west of Concord. He was the sixth of eight children of Benjamin Pierce, a farmer, Revolutionary War veteran, and later governor of his state.

Franklin was a bright, handsome, active, and well-mannered youth who never let his studies interfere with his pleasure. He describes himself at sixteen as "a very small, slight, and apparently frail boy, with exuberant spirits and no restraint except as the government of a college imposed." When he was a junior at Bowdoin College, he found himself at the bottom of his class, but at the urging of his closest friend and classmate, Nathaniel Hawthorne, he decided to turn over a new leaf and finally finished college third in his class.

As a young lawyer, Pierce was possessed of a certain brilliance although he was not a truly profound thinker. He was an able and powerful speaker, but much of his interest and energy were damned up, only to overflow in alternate moods of exuberance and melancholia. Throughout his entire life he was subject to occasional periods of extreme depression. In spite of these spells, however, he was a man of vivid personality and agreeable manners, with talents competent to sustain himself in any station of life. His personal appearance was commanding, although he was not more than 5 feet 10 inches in height and rather slight in build. He had a broad forehead with bright piercing eyes and a narrow lower face and jaw. His prompt and offhand manner of saying and doing things was undoubtedly part of his universally recognized charm.

In 1833, Pierce was elected to Congress. During his first years in Washington, D. C., Pierce became a member of a social set which indulged in a good deal of drinking. Pierce himself had the misfortune to be unable to carry his liquor, but nevertheless his fondness for drink, which he believed he had inherited from his mother, prompted him to join many of these parties, much to the despair of his wife. After one of these bouts, he and his companions got into a fight at a theater, and Pierce woke up from this spree to find himself in bed with pleurisy. A Dr. Sewall took off about 16 ounces of blood, which gave him immediate relief, and the next day 12 ounces were removed by cupping his side and shoulder. Pierce recovered from this illness without subsequent ill-effects, but this period of his life remained clouded by depression and grief.

When Pierce was elected to the Senate in 1837, he was the youngest member of that body. For five more years he remained prominent in

Washington social affairs, but at the end of that time he decided to make a fundamental change in his way of life. He resigned from the Senate with the intention of permanently withdrawing from public life, and returned to his home in Concord, New Hampshire. This decision was motivated by his devoted love for his wife, a delicate, retiring woman who had been crushed by the death of two of their three small sons and had already moved back to Concord. Rather than be separated from his wife, Pierce left Washington, for good he thought, his public excuse being that the life at the capital did not agree with his wife. At the time, Henry Watterson made the remark that the convivial Senator was doing no good in Washington anyhow and Washington was doing him no good either. Soon after this, Pierce declined both the governorship of the state and the office of United States Attorney in President's Polk's Cabinet, with the fixed purpose never again to be voluntarily separated from his family for any considerable time, except at the call of his country in time of war.

During the following years, Pierce practiced law and lived quietly with his family in Concord. In 1847, however, Pierce, who was then forty-two years old, received from President Polk a commission as brigadier-general in the volunteer army fighting the Mexican War. While enroute to the West by water, both Pierce and his men suffered intensely from lack of water and from intestinal infection. Pierce was compelled to stay in Vera Cruz from June 28 to July 15, 1847, to recover from a severe attack of dysentery.

During action in this war Pierce suffered his first severe accident. In the battle of Contreras on August 19, the attacking Americans were obliged to cross a lava bed in the crater of an extinct volcano, which bristled with sharp, jagged, splintered rocks. Pierce was mounted on a big black horse which was not used to the din of battle. At a sudden salvo from the artillery the horse jumped and caught one of its legs in a cleft between two rocks. General Pierce was first thrown with great force against the high pommel of the saddle and then catapulted to the ground. The injury was excruciatingly painful and he had to be carried back of the line of battle. An examination by Dr. Ritchie, the brigade doctor, revealed that the first blow had caused a fracture of the pelvis and that his fall to the ground had dislocated his left knee as well. Dr. Ritchie bandaged the pelvis as best he could on the field and reduced the dislocation of the knee, but the left leg continued to hang limp. Though suffering severely and urged by the surgeon to withdraw from action, Pierce mounted the horse of a fellow officer who had been fatally wounded, rode into action, and stayed in the saddle until eleven o'clock that night. The next day, when his horse was unable to cross a ravine, he dismounted and proceeded on foot. At this point, however, he was finally overcome by the severe pain and fatigue and sank to the ground unconscious. During the entire month of September he stayed at a convalescent camp to recover from his injuries, and while he was there he developed tropical fever. His stay at the camp was thereby prolonged while he was given medical treatment by the staff doctors. A few weeks later, still another complication appeared in the form of a severe diarrhea which lasted several days. These intestinal infections were taken almost as a matter

of course in the army, however, and were the inevitable result of poor sanitation and lack of adequate precautionary measures.

After the war, Pierce spent the next five years at his profession. He had all the external advantages needed to make a good lawyer—a handsome expressive face, an elegant figure, graceful and impressive gestures, and a clear musical voice which could move his audience to ecstasy or to tears. These qualities, along with his record as a soldier and public servant, finally brought him the highest honor of our country, election to the office of President.

For Pierce, however, this honor did not bring joy unalloyed. On January 6, 1853, two months before his inauguration, Benjamin, his youngest and only surviving son, was killed in a railroad accident. Benjamin and his parents were traveling on the Boston and Maine Railroad from Andover to Lawrence, Massachusetts, when their car was suddenly thrown from the track. The thirteen-year-old boy was dashed against some rocks on the roadbed and died instantly. The shock of this tragedy deeply affected the Pierces, and Mrs. Pierce never fully recovered from it. In spite of her sorrow and her frail health, however, she presided as mistress of the White House during her husband's term, but Washington never ceased to be for her a dreaded place of exile.

During Pierce's presidency, his health appears to have been good except for a persistent cough which was caused by a chronic bronchitis. The years that followed, however, brought with them much sorrow and a marked deterioration in both his spirits and his health. The death of his wife and his best friend, Nathaniel Hawthorne, had much to do with his decline. His chest colds also were becoming worse with each subsequent winter season, and they finally caused a condition called bronchiectasis which gave him much distress. At about this time his drinking, which had so far been confined to moderate limits, became excessive. There is no doubt that alcoholism was for Pierce a disease that constantly had to be fought. At times he deeply mourned this habit of his, but he did not seem to have the power to overcome it until a severe attack of bronchitis in June, 1865, when he was sixty years old, almost caused his death. This was a turning-point in his life. He stopped drinking entirely and lived a life of seclusion. Soon afterward he was baptized in the Episcopal church and became deeply religious.

During the final few years of his life, Pierce suffered a great deal of pain and discomfort in his stomach. His last summer was spent at Little Boar's Head, and while there he developed dropsy, the last of his many pathological symptoms. Although his mind remained clear, his physical frame gave way several days before the end, and his attendants had the greatest difficulty in arousing him from the lethargic slumber into which he constantly slipped. He finally died at 5:00 a.m. on October 8, 1869, at the age of sixty-four.

The actual cause of Franklin Pierce's death remains a question. A contemporary newspaper stated that the cause of death was "chronic inflammation of the stomach attended with dropsical effusion of the abdomen,"

but these terms have little scientific meaning. A brief review of Pierce's history indicates that he suffered from several conditions, any one of which might very well have caused his death. The first possibility to be considered is a cirrhosis of the liver with its terminal ascites, commonly called dropsy. It must be remembered that this disease often accompanies chronic alcoholism. A second possibility is a malignant tumor of the stomach or an ulcer which perforated, causing a peritonitis; a perforated appendix might have produced Pierce's symptoms also. Another conceivable cause of his death might have been a gradually failing heart function, which could account for his prostration and ascites before death. Without autopsy findings and with the scant medical records of Pierce's previous illnesses, no definite answer to the question can be given. In general, however, the majority of the evidence points to cirrhosis of the liver as the primary cause of Franklin Pierce's death, with heart failure and bronchiectasis, and possibly a tumor or ulcer of the stomach or a perforated appendix, as contributing complications.

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James Buchanan

1791-1868

JAMES Buchanan was another President who bolstered a rapidly growing tradition of being born in a log cabin. This particular cabin was about three miles from the village of Mercersburg, Pennsylvania, and young James was born there on April 23, 1791, the second child of James Buchanan and Elizabeth Speer Buchanan. As a boy, James, Jr., was a good student, very active in athletics, rather boisterous, and the instigator of many practical jokes. He was an expert rifleman and considered it a disgrace if the small game he brought home was not shot through the head. All these activities gave strength to his body and formed the basis of his continued good health throughout most of his life.

In 1809, Buchanan graduated from college at the age of eighteen, a tall, slender, and graceful young man. When he was twenty-three, he volunteered for service in the army during the War of 1812 and became a member of a company of dragoons captained by Judge Henry Shippen. With his company he marched from Lancaster to Baltimore and served under the command of Major Charles Sterret Ridgely until he was honorably discharged.

A few years later, in 1819, Buchanan took part in a tragic episode that shadowed the rest of his life. He was engaged to marry Miss Annie C. Coleman when suddenly, in a fit of jealousy aroused by idle and vicious gossip, she wrote him a letter of dismissal. Buchanan had loved her with all his sensitive loyal nature, and was now broken-hearted. Pride on both sides kept the couple apart until their separation was made permanent by her sudden death, a death that was probably suicide. Buchanan's grief-stricken plea to be allowed to see her remains was ignored by Annie's father, and Buchanan was left utterly without consolation. He never married, and the sorrow of this tragic romance probably was never completely assuaged.

A long time later, when Buchanan was a candidate for President, the wound was again torn open when a New York newspaper accused him of attempting suicide by hanging to escape the vengeance of Ann Coleman's brother. This story made capital of a physical peculiarity of Buchanan's—his habit of holding his head somewhat awry—and charged that this frustrated attempt at suicide had permanently twisted his neck.

The true explanation of Buchanan's wry neck, however, is to be found in certain abnormalities of his eyes. They were large and blue, and while one was myopic, or near-sighted, the other was hyperopic—far-sighted. Careful

scrutiny of his photographs and portraits reveals, moreover, that the eyes diverged and that the left eyeball was placed higher in the orbit or eye socket than was the right eyeball. One of the causes of such an eye anomaly is a paresis or weakening of the oblique muscles of the eyeball, and the result of this condition is habitual torticollis, or tilting of the head. The fact that Buchanan's face was not otherwise asymmetrical and that he had no history of head injury verifies the conclusion that his tilted head resulted from ocular rather than from orthopedic or neurologic causes.

Another habit that resulted from the abnormality of his eyes was his tendency to close one eye or the other, depending on the distance of the object he was looking at, in an attempt to submerge the image of the eye that had the poorer vision for that distance. Surprisingly enough, he was a constant reader and never wore glasses except for a short while during the last year of his life. As he developed presbyopia—old age sight—the myopia in his one eye was gradually neutralized by the increasing inactivity of the accommodation muscle, and the result was good reading vision with that eye, but practically no reading vision in his other, far-sighted eye. This is not an unusual occurrence. Another peculiar reading habit of Buchanan's was holding a candle *in front* of his eyes, no matter how bright the illumination in the room. The light from the candle evidently contracted the pupil of his myopic eye and increased his reading vision. This fact precludes the possibility that he had an immature cataract, for under the latter circumstances the lighted candle would have constricted the pupil and made reading vision more difficult.

Aside from the defects just mentioned, Buchanan was both a healthy man—he had no serious illness until he was well past middle life—and a handsome one. His personal appearance was very striking. He was a little over 6 feet tall, broad-shouldered, and admirably well-proportioned, although he grew stouter with age. His complexion was fair, his forehead massive, and he wore no beard with his abundant silky white hair. He was essentially a courtly gentleman and looked every inch the President he was. He was kind and generous, with a moral character and personal virtue above reproach. He was an eminently religious man, as is revealed in his correspondence and also in his attendance of the Presbyterian Church which he joined after his retirement from the presidency. His scrupulous integrity and exactness in public affairs were bywords among his colleagues.

Buchanan became President in 1857 at the age of sixty-five, the climax of a long political career, during which he served in the House of Representatives and the Senate, was minister to Russia and later to England, and acted as Secretary of State under President Polk. He was the last President to wear the old-fashioned stock as a neckpiece, and the first—and only— bachelor President. At the expiration of his term in 1861, Buchanan retired to his home, Wheatland, a small estate of twenty-two acres situated about one mile from Lancaster, Pennsylvania. On his arrival he was welcomed by an immense gathering of his neighbors and fellow citizens of Lancaster, and he rejoiced at being home again and free from the cares and responsibilities of long public service. The remaining seven years of his life

were spent quietly, keeping up a lively interest in public affairs and performing the duties of a private citizen.

This period, however, marked a definite decline in Buchanan's health. His personal correspondence with Harriet Lane, his niece, Dr. Blake, Mr. Leiper, Mr. Toucey, and others, reveals the increasing advent of illness during these years. He first mentions an attack of gout on February 10, 1862, with recurrences in August and November of the same year. In July, 1863, muscular rheumatism and a severe spell of "dyspepsia" confined him to his bed and later necessitated a trip to Bedford Springs for convalescence. At this time, he made the remark that the only thing for the aged was Christian philosophy and resignation. On August 3, he had a twenty-four-hour spell of violent diarrhea, which promptly subsided, however, when he took a dose of "Brown's Anti-cholera Mixture."

In March, 1864, the rheumatism in his legs was so bad that he was unable to stand or walk for weeks, and two months later his right hand and arm became affected as well. This disability decreased in time, but in the fall of 1864, he sprained his ankle while taking his daily walk, and this accident brought back the rheumatism in full force. Through 1865, 1866, and 1867 these attacks of muscular pain were sometimes labeled gout and sometimes rheumatism, the latter culminating in an attack in which his left arm and hand were so swollen that they were absolutely useless. Some weeks later, he misjudged a step on his porch, and was very forcibly thrown off balance against a post, striking his head and shoulder. The only results were a black eye and some body bruises, but they added to his already heavy burden of pain.

Buchanan's first complaint of body fatigue and exhaustion occurred on December 19, 1867, and probably marked the beginning of a failure of his heart. His arms and legs were very feeble, and he seemed incapable even of mental exertion. He failed very rapidly in April and May, showing increasing signs of heart failure and respiratory infection, and late in May he suffered a serious relapse during a spell of damp weather. He responded somewhat to stimulants and counter-irritants, but grew steadily weaker until he became unconscious on the night of May 31. He died on June 1, 1868, at the age of seventy-seven.

Up to the last seven years of his life, Buchanan's health was remarkably good. Then, successive attacks of rheumatism, gout, and dysentery wore him down until his heart could no longer stand the strain of constant infection, and he became an easy victim of a terminal respiratory infection. One wonders what a thorough physical examination might have revealed concerning a focus of infection, the actual condition of his heart muscles and valves, the possibility of kidney or bladder calculi (stones). But wondering will add nothing to positive knowledge. It can only be concluded from the facts at hand that the primary cause of Buchanan's death was pneumonia, complicated by rheumatic endocarditis (inflammation of the lining of the heart) and some type of systemic infection, probably streptococcic in character. One cannot help but feel an affection for

James Buchanan as he appears in these records; and one is glad that his life, the early part of which was so full of sorrow, finally brought him honor and contentment, before its close.

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Abraham Lincoln

1809-1865

THE ancestral history of Abraham Lincoln reveals nothing that would cause the medical director of a life insurance company to hesitate in granting a policy to the man who became one of America's greatest Presidents. His virile paternal grandfather, Captain Abraham Lincoln, was killed in the forty-second year of his life by an Indian arrow, and left five children and twelve hundred acres of land. His widow, Bathsheba Lincoln, whose strong body and intellect spoke well of her heritage, lived a pioneer's life and died at the reputed age of one hundred and ten years. There is no knowledge of Lincoln's maternal grandfather, except that he was well-born, but Lucy Hanks Sparrow, his maternal grandmother, is known to have lived until about the age of sixty-one, leaving eight children and many grandchildren to honor her.

Thomas Lincoln, Abraham's father, was honest and temperate, with a keen sense of humor and a strong physique, free from hereditary disease and tainted predispositions. He weathered the hardships of a settler's life in Virginia, Kentucky, Indiana, and Illinois, where he finally died in his seventy-fifth year. Lincoln's mother, Nancy Hanks Lincoln, was not equally strong, however, and when she was only thirty-seven years old, she succumbed to an epidemic disease of high mortality. Nevertheless, she left her son an inheritance even more important than the hardiness of his father's stock—the gift of sensitivity and understanding.

On that memorable Sunday, February 12, 1809, Thomas and Nancy Lincoln were living on the Sinking Spring Farm, four miles from Hodgenville in Hardin County, Kentucky. Although their baby was expected momentarily, there was no medical aid at hand to assist the birth. Thomas Lincoln had considered sending for Dr. Potter, but being already under obligation to him, he hesitated at "runnin' up the debt." Mrs. Mary LaRue Enlow, the Nolin Creek midwife, was engaged in another home on this eventful date, so she had sent her young niece and assistant, Mrs. Peggy Walters, to lend a hand. Mrs. Walters, along with an aunt or two of Nancy Lincoln's who had come to render assistance, prepared the necessary warm water and warm coverings and kept up a hot fire to cheer the puncheon-floored, single-roomed cabin. It is known that there were some dishes handy and a "bason" which had been purchased a short time prior to this February event. With the help of these women and their crude obstetrical paraphernalia, a husky infant was born into that precarious world. One anecdote tells that the baby, "a long eel-like string of flesh," might not have survived

except for the unexpected visit of a neighbor, Isom Enlow, who noticed that the infant's face was blue with cold. He immediately rubbed the boy's body with his warm hands and then dribbled some melted turkey fat, which he carried to oil his gun, into the baby's mouth.

When little Abe was three years old, the family moved twelve miles away to their Knob Creek farm, where they lived until the boy was eight. It was during this period that one or both of his old playmates, Dennis Hanks and Austin Dallaher, saved him from drowning by pulling him out of the river and rolling and pummeling him until the water poured from his mouth. In this rural community he lived the normal life of a backwoods boy, but there is little authentic information concerning him except that he grew longer and faster than his companions. They did not see the full length to which his body sprouted, however; that phenomenon was to astonish his friends and neighbors in Gentryville, Indiana. It was in this Indiana village that he passed through the terrible, awkward years of male adolescence and early manhood, developing his long powerful frame and feeding his searching mind on every printed page that he could find, buy, or borrow. (The only recorded illness of Lincoln during this earliest part of his life was an occasional attack of malaria, a malady which very few people in those days escaped entirely. Now and then, however, his father would give him a teaspoonful of whisky and honey "for his health.")

(It was here, too, that the nine-year-old boy received an emotional shock from which he suffered subconsciously all through his later life—the death of his mother.) She was the one who understood his desire for book-learning and gave him the sympathy and love that only a mother can bestow. Her loss was a bitter blow. A tall woman but never strong, Nancy Lincoln had become thin and overworked, and she was a helpless victim of that mysterious malady, the milk-sickness, or trembles, which in those days caused an appalling loss of life.

But Abe's life went on, dominated by the daily chores of the family's simple existence. One day while still in his early teens, Abe grew impatient at his irksome task of driving an unenthusiastic horse around a gristmill. He suddenly applied a whip and yelled, "Get up, you old hussy. Get up—" when the old gray mare left fly her unshod heels and caught him in the head. His father was sent for and hurried the senseless boy home, where he was washed and put to bed. As consciousness returned in the early morning, his first words were "—you old hussy," the remainder of the sentence he had flung at the horse just before she knocked him down. (This form of arrested cerebration resembles the interrupted line of thought observed in petit mal, a mild type of attacks of epilepsy. To Lincoln it was an intriguing experience that aroused his speculation, and in later years he often took occasion to relate the incident as an example of the mysterious working of the brain's machinery.)

As the boy's body outgrew his backwoods clothes, so his mind outgrew his pioneer environment until he became restless and dissatisfied in his father's home. Thomas Lincoln, still seeking greener pastures and using

another threatened siege of the milk-sickness as an excuse, planned to make a home farther west in Illinois. Abe, now grown to manhood, remembered the hardships his mother had endured, and out of love for his foster mother, Sarah Bush Lincoln, he agreed to remain with the family group until they were settled in their new cabin on the Illinois prairies. Once that was accomplished, his restless ambition drove him forth.

He left his own kith and foster kin and turned his face to the Sangamon country and destiny. Before he set his feet on the highroad, however, they became badly frozen during the famous "winter of the big snow," and for four weeks Abe was comfortably marooned in the big home of Major William Warnick, sheriff of Macon county and father of six girls and five boys. It was here that he met Polly Warnick, the first girl to whom he was tentatively attracted.

Once Lincoln had taken the first step toward a public career, his great talents made his progress almost inevitable. By the summer of 1834, he was, at twenty-five, a member of the Illinois Legislature. During the sessions he stayed at the Rutledge Tavern, and there he saw a good deal of the proprietor's daughter. The romance between Ann Rutledge and young Lincoln was a beautiful but short poem of young love, hopes, plans, and tragedy.

In the spring and summer of 1835, central Illinois was subjected to heavy rains followed by a period of great heat. This, as the early settlers correctly believed, contributed to the spread of malaria, "bilious fever," "brain fever" and typhoid fever. It is now known that those weather conditions were favorable to the rapid breeding of mosquitoes and flies, that these insects in turn were responsible for malarial and typhoid fevers. Ann Rutledge probably suffered, as most of the settlers did, from malaria, but it is doubtful if it was this disease that caused her death. Some of her contemporaries at New Salem asserted that she died of "brain fever," while others called it typhoid. Since so many other people, including Ann's own father, died that summer, it may be assumed that a typhoid epidemic caused her death as well as theirs. In those days there was quinine to combat malaria, but very few survived typhoid fever, and those who did, did so in spite of their doctors.

Ann's death was a tremendous shock to her young lover, then in the rainbow mists of his first great love, and it came when he was physically least prepared to meet it. He had been suffering from chills and fever every other day for some weeks prior to Ann's illness, but with the help of Peruvian bark, boneset tea, jalap, and calomel, he had been able to help nurse the stricken, make calls with Dr. Allen, and even make coffins. To this strain was added the gripping worry of Ann's illness and the final agony of her passing. Young Abe returned from the little Concord burial plot at Sand Ridge, bowed down with grief. Deserting the haunts of men, he wandered about over the hills and river banks and through the woods. He neither ate nor slept, and his friends became alarmed not only for his physical health but also for his reason.

At this point, Lincoln's good friend, Dr. John Allen, a wise man as well as a skillful physician, took him in charge. He arranged for a hospitable housewife of Bowling Green, Kentucky, to care for the distracted fellow. Aunt Polly, whose cabin still leans by the highway, took him in and mothered him until he became himself again and until, as Dr. Allen ordered, he had passed three consecutive weeks without a chill.

About a year later, in 1836, Lincoln himself recorded another period of illness lasting about a week. He wrote from the state capital, then at Vandalia, to Mary Owen in New Salem:

Vandalia, Dec. 13, 1836.

Mary:

I have been sick ever since my arrival or I should have written sooner. . . you recollect that I mentioned at the outset of this letter that I had been unwell. That is the fact, though I believe that I am about well now, but that with other things I can not account for have conspired and gotten my spirits so low that I feel that I would rather be any place in the world than here. I really cannot endure the thought of staying here two weeks.

This was his third recorded period of marked depression, the mood that came to be so familiarly associated with him. In this case, illness and an unhappy attachment to Mary Owen were important factors in precipitating the depression.]

In March, 1837, fortified by a certain political prestige acquired at Vandalia as one of the famous Long Nine assemblymen, Lincoln ambled into the newly-made capital of Illinois, on a borrowed horse. He was well begun on his career, but his purse was even lighter than when he climbed the bluff into New Salem six years before. He had just received his license to practice law, and Springfield was to be his city of opportunity. But for the first few years, things were not too bright. He was, in the words of Joseph Newton, "making his way slowly, unhappy, ambitious, alone. Inured to hardship and poverty, rarely ill, being a man of regular habits; wiry and stalwart, beyond the best western men."

After Lincoln's first two lonesome years, twenty-year-old Mary Todd came to Springfield from Lexington, Kentucky. Their famous stormy romance and engagement soon followed, but came to a sudden end on the very day scheduled for their wedding, the "fatal first of January, 1841." The chief causes of this break lay within Lincoln's tangled inner nature. He was by this time 6 feet 4 inches tall, and no one knew more thoroughly than himself how homely and gawky he was. He also knew that he was deficient in schooling, social grace, and poise, and the fact that he came from generations of poor folk and that a link in his near ancestry was missing did not add to his self-confidence.] In contrast, Mary Todd came from an old and well-to-do family of Kentucky and was a member of the socially and politically prominent Edwards family of Illinois. It was inevitable that the shy, conscientious, introspective Lincoln should develop acute fears and forebodings concerning their relationship, and that the depression engendered by these complexes, meeting with the compulsion of

his desire and his ambition, should result in an emotional conflict of a disturbing nature.

The word "fatal" as applied to that New Year wedding date was Lincoln's own. He immediately sank into a deep mire of despondency in which the blue devils harassed his soul. Herndon and others believed him within the mists of insanity, and knives and razors were kept away from him. It is asserted that he himself feared the danger of self-destruction and for that reason carried no pocket knife for months thereafter. However, according to his old friend, Orville H. Browning, this illness lasted at its worst only a week, during which time "he was incoherent and distraught." ". . . I think," said Mr. Browning, "it was only an intensification of his constitutional melancholy; his trials and embarrassments pursued him down to a lower point than usual."

It was about this time, early in January of 1841, that Lincoln wrote to Dr. Daniel F. Drake, dean of the medical department of the College of Cincinnati, a man who deservedly enjoyed a splendid reputation throughout the great West. In a long letter, Lincoln described his symptoms and asked Dr. Drake to suggest a line of treatment. Dr. Drake replied, however, that it would be impossible to prescribe without a personal interview, which would naturally include a physical examination. Beveridge in his *Abraham Lincoln* adds this footnote:

"Daniel Drake. . . was about fifty-five years old when Lincoln wrote him, the acknowledged head of his profession and greatly admired and respected. Few men have had a more brilliant career. Lincoln could not possibly have done better than to have gone to Cincinnati and personally consulted this wise, experienced, and highly educated physician, and it was a serious mistake that he did not do so."

Beveridge's concern on this score seems to be caused by "disease" about which Lincoln was apparently greatly worried at this particular time. (There is no evidence, however, that Lincoln was suffering from anything more than hypochondria, a state in which the patient believes himself to be afflicted with some nonexistent disease.) The distance to Cincinnati was comparatively great in 1841, and Lincoln evidently considered his condition not sufficiently grave to warrant the time and expense. The record of a physical and mental examination of Lincoln by a man of Dr. Drake's experience and learning would have been of much value, however, both to Lincoln's biographers and to historians seeking an understanding of medical practice at that time.

Lincoln had the good sense to turn now to his friend and competent physician, Dr. Anson G. Henry. On January 20, 1841, he wrote to Congressman John T. Stuart of Springfield, then in Washington:

Dear Stuart:

I have had no letter from you since you left—no matter for that—what I wish now is to speak of our Post Office. You know I desire it more than ever—I have within the last few days been making a most discreditable exhibition of myself in the way of hypochondriasm and thereby got an impression that Dr. Henry is necessary to my existence—unless he gets that place he leaves Springfield. You therefore see how much I am interested in the matter.

We shall shortly forward you a petition in his favor signed by all or nearly all the Whig members of the Legislature, as well as the other Whigs.

This, together with what you know of the Doctor's position and merits, I sincerely hope will secure him the appointment—my heart is very much set upon it.

Pardon me for not writing more; I have not sufficient composure to write a long letter.

As ever yours,

A. LINCOLN

Lincoln now had the diagnosis, and much was made of hypochondria in those days. One of the standard medical reference books was the *Encyclopedia of Practical Medicine*, published in London in 1833. In it, some four thousand words are devoted to hypochondria under the subtitles: "Definition and Characteristics of the Disease," "Descriptions of the Phenomena," "Diagnosis," "Causes," "Pathology," "Treatment." Hypochondria then enjoyed the distinction of being classified as a disease; now it is considered only a manifestation of a psychoneurotic temperament. Osler's *Modern Medicine* mentions the word hypochondria only to distinguish it from, or rather associate it with, neurasthenia, a word which now is usually replaced by the term "psychoneurosis."

But whether the condition is termed hypochondria, neurasthenia, or psychoneurosis, its dominant element is fear and it is usually caused by overwork and worry. As a rule, it is accompanied by varying degrees of emotional depression, and the patient's unhappiness is often a result of too great conscientiousness. The symptoms of psychoneurosis are difficult to describe because they vary greatly and depend largely on the personality of the patient. However, with present knowledge of Lincoln during this period of work, worry, fear, inferiority, and other complexes, it is fairly easy to picture the forms that the affliction took in his case.

In the treatment of hypochondria, the patient's fears must first be quieted, his nutrition must be improved, and, as all physicians from Sydenham to Osler have urged, he must plan for a change of scene and climate, for new faces and novel surroundings. (Most important of all, the patient must be brought to realize the fact that his symptoms are of purely psychological origin. Lincoln was a man of intelligence, and Dr. Henry must have given him a careful, reasoned explanation of his condition. Lincoln began to refer to his illness correctly as a "nervous debility," and, then derisively as "the Hypo"; and he began to improve.)

The only really intimate friend that Lincoln ever possessed was Joshua F. Speed, a young man who a few years before this time had shared his bed with Lincoln when he was a penniless young stranger. Speed had recently invited Lincoln to visit his home in Louisville, Kentucky, and it was there, as soon as his work permitted, that the still distraught man fled in the summer of 1841. A few luxurious weeks of changed climate and scenery on that southern plantation, a bit of mothering from Mrs. Speed who presented him with an Oxford Bible as something "good for the blues," the tonic companionship of Speed's sister, and the sympathetic understanding

of Speed himself were as balm in Gilead to Lincoln. He returned with his friend to Springfield, once more restored and set on his feet.

Yet, there had been one annoying flaw in this peaceful interlude—an aching tooth. In a long, interesting letter to Speed's sister, Mary, he wrote:

" . . . when we reached Springfield, I stayed but one day, when I started on this tedious circuit where I now am. Do you remember my going to the city while I was in Kentucky to have a tooth extracted and making a failure of it? Well, that same old tooth got to pains me so much that about a week since I had it torn out, bringing with it a bit of the jaw-bone, the consequence of which is that my mouth is now so sore that I can neither talk nor eat. I am literally subsisting on savory remembrances."

By the middle of October, Lincoln was again busy in the game of politics and in the pursuit of his profession. Although his mind continued to brood, time and work, the great palliatives, were having their way. On February 8, 1842, when he wrote to Speed, who had gone again to his Kentucky home, he remarked, "You know the hell I have suffered *on that point*," but he could go on to say, "I have been quite clear of 'hypo' since you left; even better than I was along in the fall." Again on the thirteenth, he postscripted another letter, "I have been quite a man since you left." And so he was. During June, Martin Van Buren, the former President, was entertained in Rochester, Illinois, by a group of politicians, including Lincoln, who kept the company convulsed with laughter until the small hours of the night. Van Buren later stated that he never had spent so agreeable a night in his life. In September, after some newspaper chaffing by the Honorable James Shields, involving Mary Todd and her friend Julia Jayne, Lincoln, with two-fisted Dr. Merryman as his second, fought a broadsword duel with the gentleman. Actually, however, the duel was more a farce than a battle, for Lincoln's nimble wit kept it from becoming a serious and possibly tragic affair.

Lincoln indeed seemed to be himself again. But shrewd Dr. Henry was evidently thinking of a more complete cure for his hypochondriacal patient. By fall, in the home of a certain incorrigible matchmaker of Springfield, Lincoln and Mary Todd were once more brought together. Dr. Henry's efforts were soon rewarded. On November 4, 1842, in Lincoln's thirty-third year, he and Mary Todd were quietly married, for better or for worse. As William E. Barton so nicely puts it, "These two people who were divinely created to irritate each other, were also constituted in such fashion as to be necessary to each other's comfort and peace." The essence of their difference was that Abraham Lincoln was an introvert and Mary Todd an extrovert. One week later Lincoln wrote a friend: "Nothing new here, excepting my marrying which to me is a matter of profound wonder." From now on, he had something to think of outside of himself. Mary Todd Lincoln saw to that!

Both Lincoln's attack of hypochondria and his "forebodings" over Mary Todd were manifestations of a single underlying factor, a psychoneurotic temperament. This depressive phase in his character was always and is still a source of much interest and speculation to his friends and to students of

his life. Jesse W. Weik, who collaborated with William H. Herndon in the writing of Herndon's *Lincoln*, has the following to say concerning that phase:

The most marked and prominent feature in Lincoln's organization was his predisposition to melancholy or at least the appearance thereof, as indicated by his facial expression when sitting alone and thus shut off from conversation with other people. It was a characteristic as peculiar as it was pronounced. Almost every man in Illinois I met, including not only Herndon but John T. Stuart, Samuel H. Treat, James C. Conkling, James H. Matheney, David Davis, Leonard Swett and Henry C. Whitney, reminded me of it. No one was able to determine what caused it. Stuart and Swett attributed it to defective digestion; in fact, Stuart told me and Herndon that Lincoln's liver failed to function properly. "It did not secrete bile," he said, "and his bowels were equally inactive. It was this that made him look so sad and depressed. That was my notion, and I remember I talked to him about it and advised him to resort to blue-mass pills, which he did. This was before he went to Washington. When I came on to Congress in 1863, he told me that for a few months after his inauguration as President he continued the pill remedy, but he was finally forced to cease because it was losing its efficacy besides making him more or less irritable."

My inquiry on this subject among Lincoln's close friends convinced me that men who never saw him could scarcely realize this tendency to melancholy, not only as reflected in his facial expression but as it affected his spirits and well being. Robert L. Wilson, who was a member with Lincoln of the Illinois Legislature in 1836, wrote thus to Herndon, February 10, 1866:

"Mr. Lincoln told me that although he appeared to enjoy life rapturously, still he was the victim of terrible melancholy. He sought company and indulged in fun and hilarity without restraint or stint as to time; but when by himself he told me that he was so overcome by mental depression he never dared carry a knife in his pocket, and as long as I was intimately acquainted with him previous to his commencement of the practice of the law, he never carried a pocket-knife."

The above is copied from the original manuscript signed by Wilson, delivered to Herndon, and by him turned over to me. Along with it came this reference to Lincoln's peculiarity, in Herndon's hand:

"As to the cause of this morbid condition, my idea has always been that it was occult and could not be explained by any course of observation and reasoning. It was ingrained and, being ingrained, could not be reduced to rule or the cause assigned. It was necessarily hereditary, but whether it came down from a long line of ancestors and far back or was simply the saddened face of Nancy Hanks cannot well be determined. At any rate, it was part of his nature and could no more be shaken off than he could part with his brains. Simple in carriage or bearing, free from pomp or display, serious, unaffected, Lincoln was a sad looking man whose melancholy dripped from him as he walked."

It is true that Lincoln suffered from chronic constipation more or less all his life, but it is doubtful that this condition could explain his profound melancholy. It may possibly account for his fondness for apples, however, and "An apple a day keeps the doctor away" might very well have been an axiom of his, for he was a close observer of natural laws. He regarded prudence in all respects as one of the cardinal virtues, and once remarked that "a large percent of professional men abuse their stomachs by imprudence in drinking and eating, and in that way health is injured and ruined and life is shortened."

The real source of Lincoln's melancholy remains a mystery, and Herndon

probably came nearest to the truth when he termed it occult.) If modern psychoanalysts could have studied Lincoln at first hand, or if Freud or some student of his teachings, which have introduced a new world of thought in unconscious motives, had lived in Springfield, we might now be closer to an understanding of Lincoln's personality and its development.

In 1919, Dr. L. Pierce Clark read a paper to the New York Psychiatric Society in which he offered the theory that Lincoln's attachment to the mother ideal in the form of his own mother was the origin of the unconscious motives involved in his benign depressive psychosis.) He reminds us of the lack of sympathy between father and son: of Lincoln's intense love for his mother and devotion to his step-mother; his shyness and indifference towards other women, and finally at the age of twenty-five his love for Ann Rutledge and profound depression following her death; his incomplete mental adjustment to Mary Todd as a bride and after the advent of their children, the "mitigation of the uxoriousness of the marriage tie." He further suggests that some of the love not requited in the marriage state was expressed by Lincoln in the fine affectionate companionship between himself and his third son, William, whose mere presence was an immense comfort to his father.

The final great emotional crisis in Lincoln's life was caused by the death of this favorite son in February, 1862. Lincoln shut himself away from family and friends in a darkened room, and gave evidence of such depth of despair that Mrs. Lincoln was terrified and sent for help. This time Lincoln turned to religion for solace. What had seemed to be only a form of speech and a fine method of literary expression was now changed into a new and reborn faith in the Supreme Being as a personal God. From this time on, though his body and brain grew steadily more tired, Lincoln's soul went marching on. Frank B. Carpenter, the artist who lived for six months in the White House, referring to Herndon's conception of Lincoln's religious faith as a negative one, said: "After his election, Mr. Herndon knew little of him and absolutely nothing of his mental and spiritual condition before the sickness of his son, Willie, nor after Willie's death, and I must say that Mr. Lincoln's mind underwent a vast change after the event." Dr. Clark sees a further stilling of the conflict in Lincoln's soul by a possible reconciliation with his own father as well as with his spiritual Father, toward both of whom he had always felt a subconscious antagonism. Thus we find that, in Dr. Clark's words, Lincoln at last accepted a religious outlet as a means of unconsciously solving a large part of his regressive relations with life which had heretofore taken the form of intensive and prolonged depressions.)

There is too little known of Lincoln's early life, and he was too reticent concerning himself, to justify the conclusion that mother fixation was the cause or one of the causes of his depressive make-up,) but we can more safely agree with Dr. Clark when he concludes that the cure dated from the time of the boy's death and that it was of a definite spiritual and religious nature. We may further infer that the cure was complete and would have

continued so, even during the tragic era of the Reconstruction, had he lived through it.

Lincoln's athletic-asthenic physique, suggestive of a schizoid personality; his keen sense of humor; his constant bubbling over with jokes and stories in such marked contrast to his frequent lapses into mental depression; his melancholic aspect when alone and in thought; the several spells in which his spirits sank to a lower ebb than usual; and the severe depressive reaction to his love plight with Mary Todd, form the material out of which have been constructed many varying impressionistic images of the psychopathology of this remarkable man. None of these theories can be omitted or ignored in an analysis of Lincoln's medical history.

The study of Lincoln's character and career by unprejudiced men whose minds are well trained in psychiatry will always be interesting and worthy of careful study. But no matter how fascinating, or even how true, any psychoanalytic deduction regarding Lincoln may be, there remain his great humanitarian principles and achievements which no psychiatrist can ignore or clever detractor take away. If Lincoln's periods of depression seem to us to approach or even to invade the border of the pathologic, we can be assured that Lincoln's common sense alone, all physiologic, psychologic, and inherited considerations aside, would and did lift him up whenever an emergency arose. After all, a large share of the world's work, and much of its best work, has been done by psychoneurotics. Lincoln was a psychoneurotic, but that phase of his character went into the mosaic of his intensely interesting personality and was an indissoluble part of his greatness.

Discussion of the psychiatric theories concerning Lincoln's character leads us to a consideration of other theories suggested by another more recent development in medical research—that of endocrinology, the study of the ductless glands and their imbalance and dysfunction. Some discussion of this subject seems necessary if for no other reason than that nowadays one sometimes hears references to disturbances in Lincoln's thyroid gland. Is there any evidence that some dysfunction actually existed in Lincoln's case? In answering this question, Herndon's description of Lincoln is of the greatest value, not only because he was Lincoln's partner, day in and day out for sixteen years, but because, as Jesse Weik points out, this description was prepared for delivery to audiences in central Illinois composed largely of Lincoln's neighbors, the people most competent of all to test its accuracy and truthfulness. It follows in somewhat condensed form:

Mr. Lincoln was wiry, sinewy and raw-boned—thin through the breast to the back and narrow across the shoulders. Standing, he leaned forward; was somewhat stoop-shouldered, inclining to the consumptive in build. His usual weight was about 180 pounds and height 6 feet 4 inches, the tallest of our Presidents. His organization worked slowly. His blood had to run a long distance from his heart to the extremities of his frame, and his nerve force had to travel through dry ground, a wide circuit, before his muscles were obedient to his will. His structure was loose and leathery, his body shrunk and shriveled; he had dark skin and dark hair, and looked woe-struck. The whole man, body and mind, worked against more or less friction and creaked as if it needed oiling.

His circulation was slow and sluggish.

His forehead was narrow but high; his hair dark, coarse and rebellious. His cheek bones were high, sharp and prominent; his jaws long; his nose was large and a little awry toward the right eye; thin, sharp and upturned; his face was sallow, shrunken and wrinkled, and his cheeks were leathery. His ears were large and ran out almost at right angles from his head. His head was long and tall from the base of his brain and from the eyebrow; the dimensions from ear to ear were 6½ inches and from the front to the back of the brain, 8 inches. The look of sadness was more or less accentuated by a peculiarity of one eye, the pupil of which had a tendency to turn or roll slightly toward the upper lid, whereas the other one maintained its normal position equidistant between the upper and the lower lids.

His legs and arms were very long and in undue proportion to the rest of his body. Sitting in a chair he was not taller than ordinary men; it was only when he stood up that he loomed above them. He walked like an Indian, with even tread, the inner sides of his feet being parallel, betokening caution. He put the whole foot flat down on the ground, not landing on the heel; he likewise lifted it all at once, not rising from the toes; hence there was no spring to his step as he moved up and down the street.

It is interesting to add sculptor Thomas D. Jones' recollection of Lincoln:

Lincoln was a superb athlete. He could lift a thousand pounds, five hundred in each hand. In height six feet four inches and weighing one hundred and seventy-five pounds, he had the torso of a spare, lean and muscular man, which gave him that great and untiring tenacity of endurance. His arms were very long and powerful. His head was neither Greek nor Roman, nor Celt, for his upper lip was too short for that, or a low German. The profile line of the forehead and nose resembled each other. General Jackson was one of that type of men. They have no depression in their foreheads at that point called eventuality. The line of the forehead from the root of the nose to the hair line is slightly convex. Such men remember everything and forget nothing. Their eyes are not large, hence their deliberation of speech; neither are they bon vivants or bald-headed.

Another description of Lincoln is provided by Moncure D. Conway who once made the remark that Lincoln's face had a battered and bronzed look without being hard, and that it fitted the measurements three parts sublime to one grotesque. Josiah Crawford noticed that as Lincoln studied his books, his lower lip stuck out. This was a habit which stayed with him throughout life.

There is nothing whatsoever in this or in any other description of Lincoln to suggest that he suffered from thyroid dysfunction, nor is there any suggestion of disturbance in any other endocrine gland, except for a possible slight overactivity of the anterior lobe of the pituitary gland, beginning after puberty. This may have been a factor in producing Lincoln's unsymmetrical stature—his long legs and arms “in undue proportion to the rest of his body.” But because of insufficient data and a lack of certain indispensable exact observations, this field of study as applied to Lincoln must always be a highly speculative one.) To wander even further afield in an attempt thus to explain his disposition to mental depression would be merely a venture in the realm of fancy. Furthermore, the subject of endocrinology itself is still too shrouded in darkness to make it worthy of consideration in a serious study of Abraham Lincoln.

Lincoln's personality and mental hygiene are only a part of his interesting medical history. One of the first recorded medical items concern-

ing the newly wedded pair was the advent of their first child, Robert Todd Lincoln. William E. Barton, D.D., in his *Life of Abraham Lincoln*, calls attention to the fact that Robert was born exactly two hundred and seventy days after that sudden wedding, which, he adds, "tells its own tale of immediate conception." Barton mentions this because Lincoln entered marriage with a "thoroughly morbid hesitation." To quote him further: "We discover in Lincoln a man of domestic tastes and of pure life, a man who was upright in his relations with women before his marriage, was true to his wife, and (was) the father of a family of children, yet whose attitude toward marriage was influenced by a large degree of abnormality."

Nevertheless, the four children came along with becoming regularity, Robert Todd on August 1, 1843, Edward Baker on March 10, 1846, William Wallace on December 21, 1850, and Thomas (Tad) on April 4, 1853. Whatever abnormality may have existed in Lincoln's attitude toward the marriage relation, here is evidence that he was neither lacking in virility nor was he undersexed to any degree that could be called pathological.

No record can be found of medical attendance at the four births or at the death of the second boy, who died ten months before the birth of Willie; yet it is known that Lincoln had friends who were good medical men, and Mrs. Lincoln had two kinsfolk, an uncle, Dr. John Todd, and a brother-in-law, Dr. William Wallace, who were in active practice in Springfield. Her younger brother, Dr. George Todd, was a physician in Lexington, Kentucky, and she had grown up in that city accustomed to the medical attention of Drs. Ben Dudley and Elisha Warfield. Being temperamentally nervous and fearful, she would have been quick to rely on medical aid at the least sign of danger.

Pascal Hatch of Springfield recently uncovered the following note to his father, Ozias M. Hatch, secretary of the State of Illinois, which was written by Mrs. Lincoln sometime during the late 1850's. It illustrates her quick nervous concern but does not reveal the elusive name of the family physician.

Monday Morning

Mr. Hatch:

If you are going up to Chicago to day, & should meet Mr. L there, will you say to him that our dear little Taddie is quite sick, the Dr. thinks it may prove a slight attack of lung fever. I am feeling troubled & it would be a comfort to have him at home. He passed a bad night; I do not like his symptoms and will be glad if he hurries home.

Truly your friend

M. L.

It is of interest to note here that Dr. Wallace, prior to Lincoln's marriage, had occupied the very room of the hotel to which Lincoln brought Mary Todd. The doctor was a successful physician and a cultured gentleman, which is sufficient evidence to refute the implication of Edgar Lee Masters that the Globe Tavern—at that period one of the leading hotels in Springfield—was not a proper place for a successful lawyer to bring a bride.

"Some of the illnesses in the Lincoln family during the Fifties might be deduced from the old record books of the Diller Drug Store, but so far

these records have been held in Springfield, secure and unobtainable. Nevertheless, a peek at them some years ago by Jesse Weik revealed the following items purchased by Lincoln in 1852:

Aug. 7 To prescription . . . . .	.15
11 " cal. powder .....	.10
14 " Pennyroyal .....	.10
23 " bot. carminative .....	.25
30 " bot. carminative .....	.30

From these purchases it may be concluded that the children were suffering from colic and were treated for it in the wrong old-fashioned way.

However, the genial Isaac Diller still retains one of the old daybooks of the drugstore, covering the years 1857, 1858, and 1859, which the author was kindly permitted to scrutinize. On October 8, 1857, the Lincolns' youngest child was four and a half years old, but Lincoln was still buying a bottle of carminative for twenty-five cents. On October 26, the children needed syrup of ipecac for a cough and chest cold, and another bottle was purchased in November. During 1858, a busy year in politics for Lincoln, there is only one little item found:

242—Ab. Lincoln To adhesive plaster.....	.10
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In 1859, "A. Lincoln" is listed thirteen times, often for mere drugstore sundries, but on St. Valentine's Day somebody was suffering:

242—A. Lincoln To bot. cast. oil.....	.25
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Then the usual sequel to an "upset stomach" developed—the ubiquitous cold! Four days later the following entry occurred:

242—A. Lincoln To Brown's mixture .....	.25
Cough Candy .....	.10

On May 21, 1859, he bought a tonic—a bottle of Allen's Restorative—for \$1.50, and on Tuesday, September 6, there is another interesting entry:

242—A. Lincoln To bot. Dead Shot .....	.25
bot. Lub. Extract	1.00
pt. Spt. Camphor .....	.35
1 oz. Glycerine .....	.25

The last item was a new remedy at that time and was used as a sweet lubricant for sore throat and huskiness of the voice. The spirits of camphor were then, as now, rubbed on the chest. Lubin's Extract was a perfume, and the bottle of Dead Shot was a favorite "sure cure" for an unpopular house guest that respected neither prominence of person nor the homes on the best streets—*cimex lectularius*, the common bedbug.

On Saturday, September 10, Mrs. Lincoln was again back at Diller's for another household friend—a popular cathartic of the times:

242—A. Lincoln
To box Wright's pills25

Of especial interest, however, are two entries in 1859 for June 3 and 13:

242—A. Lincoln To bot. brandy .....	.20
242—A. Lincoln To bot. brandy .....	.20

Brandy was not an uncommon item for drugstores to carry during that period, but it is the only such purchase by Lincoln recorded in these three years. The purchase of two bottles in ten days is difficult but unnecessary to explain. We know of Lincoln's personal attitude toward liquor and that on February 22, 1842, in a temperance address before the Washington Society, he said: "Physicians prescribe it in this, that, and the other disease," and "The victims of it are to be pitied and compassionated just as the heirs of consumption and other hereditary diseases."

There is an abundance of evidence that Lincoln practiced total abstinence. The aforementioned list of purchases shows that either Mrs. Lincoln desired the bottles for the ever popular brandy sauces—since mincemeat was not made in June—or that they had some medicinal use for it. Possibly Lincoln used it externally, a method which he learned from Mrs. George P. Floyd, of Quincy, Illinois, on the occasion of his sixth debate with Stephen Douglas at Quincy. After that debate Lincoln was utterly exhausted, and, as George P. Floyd, proprietor of the Quincy House, relates, he almost collapsed. He was taken by friends to his room in the Quincy House and laid on a lounge. Lincoln expressed the fear that he might have to give up the race, as he was "mighty nigh petered out." Mrs. Floyd came in and, after observing the tired man, suggested a "rum sweat," at which Lincoln protested that he never drank a drop in his life. However, after being assured that the rum was for external use only, he was willing, in his extremity, to take a chance. He was stripped, seated on a cane-bottomed chair, and covered with blankets. Then a pan of New England rum was lighted and placed under the chair. This started a perspiration, after which he was put to bed and the sweating continued under more blankets and with the help of hot ginger tea. The next morning Lincoln appeared bright and early, feeling like a two-year-old and vociferous in praise of Mrs. Floyd's treatment.

In 1856, Lincoln helped to organize the Republican Party in Illinois, and from both necessity and inclination he did a great deal of reading. Most of it was in fine print and on poor paper, yet he managed without glasses until the year 1857, when presbyopia overtook him and compelled him to get a pair of reading lenses. These he purchased in a diminutive jewelry shop in Bloomington, Illinois, while shopping with Henry C. Whitney. The latter writes that Lincoln bought his first pair of spectacles for thirty-seven and a half cents, remarking that he had got to be forty-eight years old and "kinder needed them." This incident gives some indication that Lincoln was blessed with eyes that were normal from an optical point of view, since it was not

until he was middle-aged that his sight for close work became deficient (Fig. 3).

But his ability to make his two eyes work together is another matter and opens up an interesting, though rather technical, field for conjecture. In order to obtain single, comfortable vision with both eyes, the muscles that

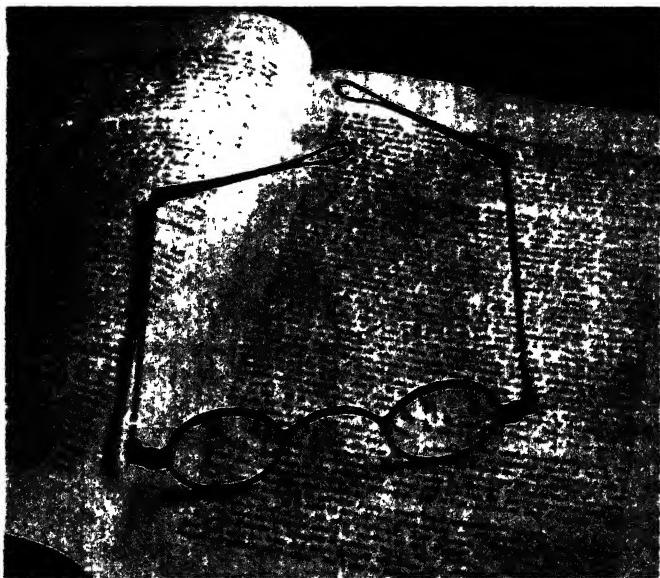


Fig. 3. Iron-rimmed spectacles purchased by Lincoln at the age of forty-eight. They cost $37\frac{1}{4}$ cents, and each lens had a power of 6.75 diopters, which was stronger than necessary.

control their position and alignment, vertically and horizontally, must work in almost perfect co-ordination. When there is only a slight or latent degree of lagging of one eye, due to an underacting or overacting set of muscles, various nervous symptoms usually develop—eyeache, irritability, and even mental depression. When the deviation of one eye becomes apparent, these symptoms tend to subside and double vision develops.

Dr. W. H. Crisp makes some interesting observations concerning Lincoln's eye co-ordination. Full-face photographs of Lincoln indicate an apparent upward deviation of the left eye sufficiently great to suggest either that the two eyes did not work together, which would produce a lack of fusion of their images, or that there was a vertical strabismus. However, Lincoln related to several of his intimate associates an incident during the election campaign of 1860 which suggests that at that time, and on one occasion only, he experienced an isolated and exceptional attack of double vision. It is rather difficult to believe that such a brief spell of double vision could be caused by a deviation of the optic axes such as is suggested by his portraits. It seems more probably explained by a persistent vertical deviation of the eyes to which the brain would become so accustomed, by the relatively

simple process of ignoring the image produced in one eye, that the person would not be conscious of any abnormality in his vision. If co-ordination between the two eyes happened to be more usual than deviation, both the photographer and Lincoln himself would probably have arranged that the portrait be made during a period of co-ordination. It is not, of course, impossible to assume the simultaneous existence of facial asymmetry, with an abnormal relationship between the lid margins and the cornea, and a hyperphoria which only on very rare occasions manifested itself as a hypertropia, or uncontrolled tendency to vertical deviation of the optic axes.

Some particularly interesting information with regard to the reading glasses worn by Lincoln has been furnished by Almer Coe and Company of Chicago. The strength of the lenses in each eye was plus 6.75 diopter sphere. It is very probable that Lincoln had 4 or $4\frac{1}{4}$ diopters of hyperopia, or far-sightedness, in spite of the fact that he did not buy his first pair of reading glasses until he was forty-eight years old. It would not be altogether preposterous to assume that, in the middle of the last century, a person of strong will and unusually good accommodation might have struggled successfully, even to the age of forty-eight, against the disability created by a hyperopia of 4 diopters. A man with such a disability who was also active in law and politics might even reap some advantages from the situation by being forced to develop an active and reliable memory. It would also be reasonable to suppose, although quite impossible at this time to prove, that there was a connection between Lincoln's high refractive error—which was possibly connected with anisometropia, muscle imbalance, and astigmatism—and his hyperphoria. A thorough refraction and eye examination with a dilated pupil and a complete study of his muscle imbalance might have improved Lincoln's vision greatly, either by providing him with proper lenses incorporated with prisms, or by surgery of the ocular muscles.

Herndon's description of the dissimilarity between Lincoln's eyes had already been noted, and this peculiarity was commented upon by many others. In an address delivered in Portland, Maine, February 12, 1901, Dr. Eratus Eugene Holt referred to Lincoln's optical illusions and pronounced them due to a temporary lack of balance of the external ocular muscles. Parts of this address were as follows:

"As he lay there upon the couch, every muscle became relaxed, as never before. In this relaxed condition, in a pensive mood . . . all the muscles, that direct, control and keep the two eyes together, were relaxed, the eyes allowed to separate and distinct image by itself. The relaxation was so complete for the time being that the two eyes were not brought together, as is usual by the action of converging muscles, hence the counterfeit presentment of himself. He would have seen two images of anything else, had he look for them but he was too startled by the ghostly appearance."

It remained for Dr. S. Mitchell of Hornell, New York, in the *Ophthalmic Record* for May, 1914, to make the first recorded observation that Lincoln must have suffered from a left hyperphoria and hypertropia, or vertical deviation. He also called attention to the corrugation of Lincoln's brow and the crow's-feet about his eyes common symptoms of eye muscle imbalance.

In 1926, Dr. Edward E. Maxey read another paper on this subject. He, too, attributed the double image episode to a hyperphoria or cyclophoria of Lincoln's external eye muscles. He pointed out that this condition might explain much of Lincoln's physical laziness in youth and manhood and his fatigue during his presidency, and claimed that Lincoln's habit of lounging was an instinctive search for a less tiring position for his eyes.

A Dr. Shastid who practised medicine in Pittsfield, Illinois, knew Lincoln during his youth, and his recollections have been recorded by his son, also a physician. According to the elder doctor, from early childhood Lincoln's left eye looked queer at intervals and then suddenly crossed, not laterally but turning upward. This tendency is now called hyperphoria, and when the left eye was actually turned up and the gaze fixed with the right eye, the condition then became a hypertropia. Dr. Shastid suggests that this distressing condition was at least partly responsible for the spells of melancholia from which Lincoln suffered. The possibility that Lincoln was color-blind is also mentioned, and is supported by the fact that he often referred to the sunset, to flowers, and so on, remarking that although they appeared beautiful to others they held no beauty for him. Dr. Shastid recalled that Lincoln had a peculiar high-pitched voice which was often disagreeable, although his enunciation was distinct, regular, and somewhat staccato. When he became emotionally upset, his left eye would turn up and his voice become almost shrill. Usually, however, he was a slow thinker and a deliberate talker.

Aside from these inherent and more or less unchanging physical peculiarities, Lincoln's health, though constantly threatened by overwork, suffered few complete breakdowns. On July 4, 1860, however, Lincoln wrote in a letter to his old friend, Dr. Anson G. Henry, then in Lafayette, Oregon, that he had suffered from a throat infection.

My dear Doctor,

Your very agreeable letter of May 15th was received three days ago. . . .

Our boy in his tenth year (the baby, when you left) has just had a hard and tedious spell of scarlet fever and he is not yet beyond all danger. I have a headache and a sore throat upon me now, inducing me to suspect that I have an inferior type of the same thing.

Our eldest boy, Bob, has been away from us nearly a year at school, and will enter Harvard University this month. He promises very well, considering we never controlled him much.

Write again when you receive this. Mary joins in sending our kindest regards to Mrs. H., Yourself, and all the family.

Your friend, as ever

A. LINCOLN

This illness of Lincoln's was probably not a mild attack of scarlet fever, as he thought, but more likely an acute tonsillitis or what would now be termed a streptococcal pharyngitis. Lincoln must have been more or less subject to this sort of trouble then, for Mrs. Lincoln was always extremely solicitous that he should not go out without a muffler or something about his throat. Perhaps, too, Lincoln's long, stooping thinness aroused her anx-

iety about a possible "tubercular tendency." Herndon also called him "consumptive in build." There has been much speculation as to whether these fears for Lincoln were justified, but the most that can be said is that it is possible. A latent tuberculosis, which Lincoln himself feared, might have been gradually breaking loose in his hard-muscled body during those war-harassed days in Washington, and might account in part for his haggard, ashen face, his emaciation, and his fatigue. It is a recorded fact that Lincoln lost 40 pounds in the few months previous to his inauguration.

The first attempt on the life of Lincoln was made on February 22, 1861, when as President-elect he made a secret journey from Harrisburg to Washington. He was to be assassinated in Baltimore, and the apparent ringleader of the gang was a local barber who, with a few others, was chosen by ballot at a secret meeting to carry out the details of the plot. An ingenious change of Lincoln's itinerary by Secret Service men successfully thwarted this plan, but it was the first inkling of what was to come from the rabid secessionists who were everywhere present.

Early in the administration, Mrs. Lincoln began her habit of daily drives and insisted as her right that Mr. Lincoln accompany her; it was her only means of getting him out into the fresh air. He was often called to the Cabinet room as early as five o'clock in the morning. He would have his coffee sent in to him, putting off breakfast until nine or ten o'clock and leaving Mrs. Lincoln fuming about it all. She resorted to many schemes to regularize his meals. Often she would invite distinguished guests for breakfast and then send her husband a definite message that she and the company were waiting. A favorite guest of hers was the genial Sam Gallo-way, of Ohio, who was often present at the family meals. He delighted in making the grim furrows on the President's face soften and alter their contour as change of thought and an exchange of stories brought laughter and relaxation to his burdened spirit. With eyes brightened and face lighted up, the President would leave the table, ready to meet again the never-ending bombardment of his troubles.

During the first week or two of Lincoln's term, while threats of assassination were being broadcast, General Scott had placed guards about and in the White House, and a feeling of danger and insecurity permeated the household. One night every member of the household, except the servants, was taken suddenly ill, and physicians were hastily called. A rumor of attempted poisoning was started but soon quieted when it was learned that the family had eaten too well of the unaccustomed Potomac shad.

The burdens of his office steadily increased, but not until more than two years later is there any mention of Lincoln's having a definite illness. On November 19, 1863, after Lincoln had delivered his immortal Gettysburg Address, Wayne MacVeagh, then a young but already prominent lawyer, was a guest of Mr. Lincoln at Gettysburg, and later wrote: "Others then came around him and I did not see him again until on the train on our way home. He was suffering from a severe headache and lying down in the drawing room with his head bathed in cold water." This is definite evidence

that Lincoln suffered from migraine, even in middle age.) On November 28, *The National Republican* contained the following brief editorial, entitled, "Health of the President":

We are glad to be able to announce that the President is much better today. The fever from which he has suffered has left him. Thursday and Thursday night his suffering was chiefly from severe pains in the head. Yesterday, and the day before, he was not permitted by his physicians to hold any interviews even with the members of his Cabinet. It is hoped that in a day or two he will gain sufficient strength to resume his official duties.

A few weeks later there is a reassuring entry in the diary of Mr. Gideon Welles, a Cabinet member: "Tuesday, December 15—Seward and Chase were not present at the Cabinet meeting. The President was well and in fine spirits."

In the latter part of his stay in the White House, Lincoln developed smallpox. The symptoms came on shortly after the visit of a woman who had just attended a smallpox patient in the hospital. His condition was diagnosed as varioloid, a mild form of smallpox acquired by the partially immune, so the White House was not quarantined. But the newspapers made a good deal of it, and even the *London Spectator* speculated on the effect on the war of a possible fatal termination of the disease. It published a brief description of the man who would succeed Lincoln, Vice President Hannibal Hamlin, and closed with this contribution: "Let us hope, however, that there will be no occasion for the curious medley of associations suggested by the substitution of a Hannibal in the political patriarchate, for an Abraham." Being confined to his bedroom for two weeks, attended by Dr. Stone, Lincoln at least had some respite from the importunities of the many people who constantly sought favors of him. "Now, I have something that I can give to everybody," he humorously exclaimed. And though he attended to important matters, he used the smallpox scare to advantage to rid himself of more than one undesirable visitor.

Lincoln probably suffered less from major sicknesses than from minor disorders. Two of these latter torments were those products of civilized feet —corns and callouses. An engaging individual with an air, whom the President addressed as "Doctor," one Isachaer Zacharie, cared for those large feet so successfully that Mr. Lincoln gave the chiropodist an autographed testimonial of his skill. Nevertheless, whenever he could, Lincoln would shed his constricting shoes and even his carpet slippers, and enjoy those famous blue woolen socks of his.

Even during his occasional brief periods of supposed rest and vacation, each day Lincoln would be back at his desk or haunting the telegraph office and Secretary Stanton's room close by in the War Department. Sleepless nights and protracted days were pulling his habitual low blood pressure lower, while at the same time anxiety and worry were urging the pressure upward and gradually sclerosing his arteries.

Soon after Lincoln became President, a life insurance expert, Rufus Small, attempted to write a policy on his life, but Lincoln refused to take the in-

surance agent seriously, remarking that he was not yet ready to sell his bones to a physician. The fact remains, however, that his widow and sons would have been saved much humiliation at the hands of Congress if he had "sold his bones," as he expressed it, to a reputable insurance company. But life insurance was a new idea at the time, and Lincoln lacked confidence in its surety. Possibly, also, his old streak of superstition was a subconscious restraining influence.

Besides the ever present danger of violence, the tremendous responsibilities of his office were steadily doing their work of attrition, disintegrating the rock and iron of Lincoln's constitution. He had aged with great rapidity and his old friends were shocked at the alteration in him. Noah Brooks, who knew him in Illinois, said that the change which a few years had made was simply appalling. John Hay wrote that in mind, body, and nerves, Lincoln was a different man at the second inauguration from the one who had taken the oath in 1861. Horace Greeley in his weekly *Tribune* of April 21, 1865, said: "When we last saw Mr. Lincoln, he looked so weary and haggard that he seemed unlikely to live out his term." And when the great sculptor, Augustus Saint Gaudens, first saw the life mask of Lincoln's face made by Clark Mills in the spring of 1865, he insisted that it was a death mask.

The growing exhaustion of the country was indeed being reflected on the face of the President. He had become sallow, haggard, and dark-circled under the eyes. He once said, "I sometimes fancy that every one of the numerous grist ground through here daily, from a Senator seeking a war with France down to a poor woman after a place in the Treasury Department, darted at me with thumb and finger, plucked out their special piece of vitality and carried it off. When I get through with such a day's work, there is only one word which can express my condition and that is 'flabbiness.'" And yet, when urged to rest, he replied that the tired part of him was inside and out of reach!

But a day of thanksgiving finally came for Lincoln when on April 9, 1865, news of the war's ending reached him. He had, in fact, six whole days of peace which transfigured his pale, sad, worn face with an expression of serene joy. Six days of happiness and planning for the future—and on the seventh he was gone! From a sense of duty to the people who expected him, he accompanied his wife and two friends to the Ford Theater on April 14, and there, with thankfulness to God and forgiveness to his enemies in his great heart, his brain received the bullet from the derringer of John Wilkes Booth.

The audience-packed theater was held in momentary shocked silence as the "regicide" made his dramatic escape, and then seething excitement boiled up throughout the house. Mrs. Lincoln, frantically screaming and calling for help, held the President upright in his rocking chair. Calls for a doctor brought Dr. Charles A. Leale, assistant surgeon of the United States Volunteers, who climbed over the railing of the box. Mr. Lincoln seemed to be dead. His eyes were closed and his head had fallen forward. Dr. Leale

felt of his pulseless wrist and immediately laid him out on the floor with his head in the arms of Laura Keene, the actress. He then found a large clot of blood on Lincoln's left shoulder, which led him to look for a dagger wound. He slit open the coat and shirt sleeve but found no injury. On lifting eyelids he saw evidence of brain injury, and immediately afterward the clotted wound in the back of the head was revealed. When he removed the clot, the intracranial pressure was eased, and shallow breathing and a weak pulse started up again.

Dr. Charles S. Taft, acting assistant surgeon, United States Volunteers, was now lifted into the box from the stage and found Dr. Leale bending over the President, attempting to stimulate the respiration by placing two of his fingers into the throat and pressing down and out on the base of the tongue to free the larynx of secretion. Dr. Albert F. A. King had also come into the box, and Dr. Leale asked each physician to manipulate an arm while he pressed upward on the diaphragm and under the left lower costal border to stimulate the heart's action. This was followed by an improvement in the pulse and the irregular breathing.

Fearing the effects of any more bodily manipulations during this first stage of profound shock, Dr. Leale then attempted further stimulation by forcible in-and-out breathing into Lincoln's mouth, and soon heart and lungs were acting independently of artificial stimulation. Brandy was then poured into his mouth, and he swallowed it. As the danger of immediate death was over, bystanders urged that the President be removed to the White House, but doctors insisted on getting him into the nearest bed. With some difficulty, Dr. Leale supporting the head, Dr. Taft the right shoulder, and Dr. King the left, the stricken Lincoln was carefully carried across Tenth Street to the rented room of William Clark, a boarder in the house of William Peterson, and placed on a four-poster bed at about 10:45 p.m., just fifteen minutes after the shooting.

After an unsuccessful attempt to remove the footboard of the bed, Lincoln's knees were unflexed by placing him diagonally across the bed, and pillows were propped under his body so that he lay in a gently inclined plane. The windows were now raised, the room was cleared, and the patient was undressed in order that the doctors might search for more wounds. They found no others, however. Hot-water bottles and blankets were sent for, and the doctors applied a large sinapisum, or mustard plaster, over the solar plexus and entire anterior surface of the body. Examination of the wound was made, using a finger as a probe, but the ball could not be found. When Dr. Taft poured brandy between Lincoln's lips he choked, but finally swallowed it with much difficulty; another teaspoonful ten minutes later was retained in the throat. His respirations now became labored, and the pulse rate dropped to forty-four a minute and was feeble. His eyelids were discolored and entirely closed; beneath them the left pupil was greatly contracted and the right widely dilated, with no reaction to light in either.

Shortly afterward, Dr. Stone, Lincoln's family physician, and a little later, Dr. Joseph K. Barnes, surgeon general of the United States Army, and Dr.

Charles H. Crane, colonel and assistant surgeon general of the United States Army, came in and took charge of the mortally wounded President. At their suggestion, brandy was again administered, unsuccessfully, however, and for the last time. During the night Dr. Neal Hall came in, the physician with whom Dr. Stone consulted during the last illness of Willie Lincoln. Other prominent physicians of Washington, including Drs. C. H. Lieberman and J. F. May, also arrived. Dr. Beecher Todd of Lexington, a cousin of Mrs. Lincoln, was there through the long night. Others present were Acting Assistant Surgeon Gord and Drs. C. D. Gatch and E. W. Abbott. Dr. Abbott made a detailed record of the President's pulse and respirations. Descriptions of Mrs. Lincoln's visits to her husband's bedside were later published in the daily papers.

Lincoln's left upper eyelid was dark and swollen soon after he was put to bed. Thirty minutes later the inner angle of the right eye became dark and swollen, and soon there was a double exophthalmus. At 11:30, twitching of the left side of the face developed and continued for some fifteen to twenty minutes with the mouth pulled slightly to the left side. The intracranial pressure, which caused embarrassment to the heart and lung centers, was frequently relieved by removing blood clots from the wound. At 1:00 a.m. spasmodic contractions of the forearm occurred and the muscles of the chest became fixed, causing the breath to be held during the spasm, which in turn was relieved by a sudden expulsive expiration.

At 2:00 a.m. Dr. Barnes attempted to find the bullet with an ordinary silver probe which met an obstruction in the path of the bullet about two inches deep. There is some question as to whether this obstruction was a portion of the bullet or if it was just a bony irregularity in the floor of the cranium. A long Nelaton probe was then passed beyond the driven-in piece of skull, and the bullet itself was distinctly felt about two inches beyond. Passing deeper, the broken segments of the right orbital plate of the frontal bone were felt at a distance of seven and a quarter inches. The probe was then withdrawn, and no further efforts at explorations were made.

At 5:00 a.m. the oozing from the wound ceased entirely, and Lincoln's breathing became stertorous and labored. During his last half hour it would cease entirely for a minute and then resume after a convulsive effort. Each time those who were gathered about the bed thought it was the end. His last breath was finally drawn at twenty-one minutes and fifty-five seconds past 7:00 a.m., and the last heart beat occurred at twenty-two minutes and ten seconds past the hour, on Saturday, April 15, 1865. Dr. Barnes' finger was over the carotid artery, Dr. Leale's finger was on the right wrist pulse, and Dr. Taft's hand was over the cardium when that mighty heart made its final contraction. After a full minute of awed silence, Edwin Stanton solemnly made his famous pronouncement of death, and the Rev. Dr. Phineas D. Gurley knelt in fervent prayer. So passed from the earth this great man, to live for the ages.

President Lincoln was practically unconscious from the time he was shot until his death. One of the observations made by his attendants was that

when the orifice of the wound was kept open and blood escaped freely, the patient would breathe better and his pulse improved; but whenever the opening was closed with clotted blood, the breathing became more difficult and the pulse more irregular. Now, however, there was nothing more for the doctors to do, except to gather for the autopsy, which was held in an upper guestroom in the northwest wing of the White House, at 11:00 a.m., Saturday, April 15. Also present were Surgeon General Barnes, Assistant Surgeon General Crane, Dr. Stone, Assistant Surgeon Woodward, United States Army, Assistant Surgeon Curtis, United States Army, Assistant Surgeon W. M. Notson, United States Army, and Assistant Acting Surgeon Taft, United States Volunteers.

Dr. Leale declined an invitation to be present. He was a young physician, only twenty-three years of age, and his experience through the night was all that he cared to endure. On April 19, however, the day of the funeral procession to the rotunda of the Capitol, he did not refuse an invitation to join the "Surgeon General of the United States and Physicians to the deceased," who, by order of the Adjutant General's office, in consideration of their earnest effort to prolong the President's life, were given a post of honor immediately in front of the sensational pallbearers and the hearse. Dr. Leale lived until 1932, when he died at the age of ninety, and though he was always reluctant to discuss that night which, even after many years, brought him only emotional depression, he had reverently saved his creped sword and blood-stained cuffs.

It is unnecessary to review the details of the postmortem, except to trace roughly the passage of the fateful bullet, which is now preserved in the archives of the War Department. This bullet, fired from a derringer, had been remoulded, a process which made it brittle. It was made not of lead, but of brittomia, a hard alloy of tin, copper, and antimony. It had split into two pieces in its progress through the brain, the smaller piece lodging halfway in its track through the brain. The larger part of the bullet entered the cranium through the occipital bone just behind the left mastoid process, one inch to the left of the superior longitudinal sinus, tore the lateral sinus, and, passing obliquely through the brain, carried large fragments of bone with it for two and a half inches (Fig. 4). It stopped in the right anterior lobe of the cerebrum, just behind the right orbit, fracturing the orbital plates of both orbits. But the anterior dura mater, the thick covering of the brain, lying over the posterior orbital bone, was uninjured. This most unusual double fracture of the orbital plates was decided and announced to be a fracture by contrecoup.

This explanation was generally accepted by the medical profession. In 1865 the London *Lancet*, the foremost medical journal of the time, published an article by T. Longmore, professor of military surgery at the British Army Medical School, in which he agreed that the fractures were caused by the brain being driven against the orbital bones by the impetus communicated to it by the bullet. W. F. Teever, F.R.C.S., surgeon to the West London hospital, disagreed with this opinion, however. He claimed there could not have been a transmission of force for the reason that the bullet

struck the occiput with such velocity as to make a sharp, clean-cut hole, just the size of the missile, and therefore, could not have transmitted its motion to the surrounding bone and brain. In his opinion, the bullet was spent when it struck the right orbit, and rebounded without injuring the

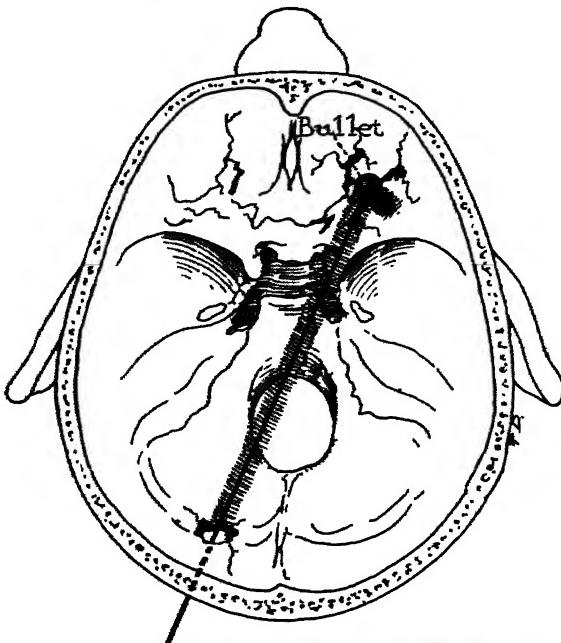


Fig. 4. The probable course of the bullet through the head of Lincoln. Cross-section of the skull. Drawing by Russell Drake in "Greatest Wounds of Three Presidents of the United States," by S. B. Harper.

dura, even as a spent bullet will fracture a long bone without penetrating the clothes that cover it. He believed that the left orbital fracture was an extension of the right orbital fracture, and that the surgeons would have found that communication by a more minute examination. We may be sure, however, that a careful search for a connecting fracture had been made. Also, it is quite improbable that a fracture of the thin orbital bone could extend through the heavy sphenoid or the heavy frontal bone to the opposite orbital plate. The force called contrecoup is still the best explanation for that remarkable double fracture.

Very little attention has been paid to the fact Lincoln was shot between the left mastoid bone and the mid-occipital region while sitting in a theater box with the *left side* of his face and body exposed to the audience. Certainly no one in the same box could have inflicted this wound ordinarily, unless he had circled around in back of Lincoln and then shot him with the pistol in his left hand. However, Booth was not left-handed; he fought sword battles on the stage with the sword always in his right hand, and saloon keepers, hotel clerks, and owners of livery stables all testified that

he was righthanded. At his favorite shooting gallery, Booth practiced many fancy trick shots, but always with his right hand. In Major Rathbone's struggle with the assassin, he had parried Booth's dagger blow by thrusting his left arm upward, so the knife must have been in Booth's right hand.

An answer to this mystery of the location of the bullet wound is very ably and accurately presented by James P. Ferguson, a restaurant keeper of Washington who was an eyewitness to the murder, according to Otto Eisenchiml in his book, *The Case of A. L_____*, *Aged 56*. "The hero of the play had just thrown a facetious remark at the retreating figures of two actresses. Just then Lincoln's attention was attracted by a slight disturbance in the pit of the theater. He pulled the curtain aside, and with a quick movement turned his head toward the center of the playhouse, looking downward between the curtain and the post." Curiously, it was at this very instant that Booth pulled the trigger. The coincidence is so bizarre as to be almost unbelievable, but the bullet actually struck Lincoln while his head was twisted sharply to one side in a downward direction. Only for a moment did Booth confront the President's left profile, but it happened to be the moment which called for action. Hence, the bullet entered Lincoln's head on the left side and followed a forward and upward course. There was no other way for it to go.

The question whether surgical interference should be attempted was undoubtedly considered during the frequent consultations of Lincoln's doctors, but beyond a probing of the wound to find the bullet, nothing was done. A decompression operation might have relieved the intracranial pressure caused by edema and hemorrhage, but no operation could have averted the fatal result of the injury. In any case, surgery of this type is usually not undertaken until from forty-eight to seventy-two hours after the incurrence of the wound. Present-day treatment would probably consist of thorough cleansing of the wound with normal saline solution and removing any bony particles or debris under aseptic conditions. Respiratory stimulants would be given, and intravenous injections of saline or dextrose solutions would be administered, as well as whole blood or blood plasm.

Even such treatment, the best that modern medicine can offer, could have had no more than a palliative effect. The bullet's extensive destruction of brain tissue and vital centers made Lincoln's death inevitable. There was nothing more that could be done for this beloved hero but to mourn his passing and to honor his principles forever.

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Andrew Johnson

1808-1875

ANDREW Johnson came to the presidency under tragic circumstances and under a great handicap—perhaps the greatest handicap ever imposed upon a newly inaugurated President. Abraham Lincoln, one of the greatest men in the country's history, had just been assassinated, and any man who succeeded him was bound to appear inferior in stature. The Civil War was over, but the urgent problems of re-establishing peaceful government and reconstructing the South were still unsolved. The bitter hatreds of the war did not end with the military surrender, and Johnson became the scapegoat for the dissatisfactions of both sides. A Southerner who had supported the Union, Johnson was in an anomalous position. His sincere efforts to follow Lincoln's proposed policy of leniency and aid to the South during its reconstruction period resulted only in his impeachment, with acquittal by the slim margin of a single vote.

But Johnson, born of a poor family and forced to work his way since boyhood, was used to hardship and opposition. He was born at Raleigh, North Carolina, on December 29, 1808. His father, Jacob, was of an old Virginia family living in what is now Pendleton County, and his mother, Mary McDonough, was born in North Carolina of Scotch-Irish descent. While his father was a porter in the once famous Casso's Inn at Raleigh, his parents lived in a little cottage inside the inn yard, and it was there that Andrew, their second son, was born. Even as a young boy he was a leader, extremely restless in disposition and ready to start any amusement or even mischief that took his fancy. His favorite games were baseball and "bandy," and he loved to climb picket fences and trees, with the result that his clothes were usually torn and soiled.

When Andrew was ten years old, he was bound as an apprentice to a tailor, James J. Selby. Bound really meant bound in Andy's case, for he was chained to a table and a pair of shears and had no chance either to play or go to school. When he was sixteen, however, he took part in an escapade that led to the end of his bondage. He and another apprentice threw stones at the house of a Mrs. Wells, and when they were threatened with being sued, the two boys, together with Andy's older brother, ran away. This led to the famous advertisement which offered a \$10 reward for the return of the two Johnson boys to Mr. Selby. Luckily enough, that reward was never earned, and young Andrew remained free to make his own career.

It is amazing how successful that career was, considering Johnson's lack of formal education and social position. He settled in the town of Green-

ville, Tennessee, and at the age of nineteen married Eliza McCardle, who taught him how to write. Soon afterward he became an alderman, and before he was twenty-two he was mayor of the town. In 1835 he entered the state legislature, and in 1843 he was elected to the United States House of Representatives. He served there until 1853, when he became governor of Tennessee. Four years later he entered the United States Senate, where he remained until appointed military governor of Tennessee by Lincoln in 1862. In 1864 he was elected Vice President, and within a year he had succeeded to the presidency through Lincoln's death. He had come a long way indeed from his humble beginning as a tailor's apprentice.

In adult life, Johnson stood 5 feet 10 inches tall, and his compact figure gave an indication of muscular power and strength. His sturdy legs were somewhat short in comparison to the rest of his body, but he held himself very erect with his heavy broad shoulders thrown back. His head was massive and well-shaped, his neck thick, and his chest broad and deep. He had a swarthy skin and luxuriant dark hair which in later years thinned out and turned gray. His most striking facial features were his dark, deep-set, piercing eyes, and he did not wear glasses until he was well past fifty years of age. He had a wide, high forehead with a large bony protuberance above each brow, a large nose, mobile mouth, and a firm, square, slightly underslung jaw with a cleft chin. Though a large man, his feet and hands were small. As for recreation, Johnson's favorite game was checkers, although he never became an expert. He never went to the theater and he considered gambling wrong, but he took great pleasure in circuses and minstrel shows. His greatest fault was his occasional lack of tact and dignity. Though kindly and sympathetic at heart, his natural shyness made him appear hard and inflexible except to his closest friends.

Johnson's health during his early years of life was apparently good. The first mention of ill health occurs when he was a congressman from Tennessee. This sickness, although its exact nature is not known, was severe enough to make him abandon his political career for the time being, but he recovered in time to accept the governorship of the state. In those days, physical violence was almost as great a threat as disease, and a public official needed courage as well as political ability. On one occasion a placard was posted in Nashville warning Johnson that he was to be shot on sight. An escort was offered to him, but he answered, "No, gentlemen: if I am to be shot, I want no man to be in the way of the bullet." He continued to walk about alone, and no attempt was made to shoot him. Some time later, his life was again threatened, and on facing a hostile audience, he asked them not to speak but to shoot him. Placing his right hand on his pistol and holding his coat open with his left hand, he blandly faced the people. There was no disturbance, and Johnson, remarking that he had evidently been misinformed, proceeded with his speech. At another time, following a heated debate between Johnson and Senator Bell, a duel was proposed, but the next day there were apologies on both sides and the affair was forgotten.

During the period just preceding the Civil War, Johnson became very

unpopular with his fellow Tennesseans because of his stand for unity of the states. Once when he was riding in a train, a stranger came down the aisle and asked, "Are you Andy Johnson?" On receiving an affirmative answer, the stranger attempted to pull Johnson's nose. A lively scuffle ensued but neither man was greatly harmed. Feeling ran so high at this time that Johnson's life was constantly in danger. His mail was filled with threats and insults, and a price was even set on his head. However, these incidents seemed only to inspire him further in his efforts to plead the Union cause.

When Johnson was fifty-five and newly elected Vice President, the same insurance company that had offered to insure Lincoln's life free of charge made a similar offer to Johnson. Unlike Lincoln, Johnson accepted this proposal and was found by the medical examiner to be in perfect physical condition. Between the time of his election and his inauguration, however, Johnson suffered from an acute attack of typhoid fever. He was in bed for several weeks with a high fever and severe prostration. Official notice of his illness was printed in the New York *Tribune* on March 1, 1865, in a dispatch from their correspondent at Columbia, Tennessee. Because of its prevalence in the days of the Civil War, no great importance was attached to typhoid fever at that time, but it marked the beginning of a major tragedy in Johnson's life.

His convalescence was long drawn out, and despite his plea to be inaugurated in Nashville, he was summoned to Washington. On the evening before his inauguration, several of his friends gave him a party at which a good deal of wine was consumed. The next morning he awoke to find himself greatly debilitated from the after-effects of the typhoid fever, from his journey to the Capitol, and from the party of the night before. Against the better judgment of his physician, he was driven to the Capitol and taken to the Vice President's room. He was perfectly sober but almost overcome by his weakened condition and by the excitement of the occasion, and before the ceremony began he asked if he might have some whisky as a temporary stimulant. It was sent for and Johnson took a good stiff drink of it. In a few minutes the drink and the heat of the Senate Chamber played havoc with him and put his mind in such a befuddled condition that he gave an address that was rambling and incoherent to say the least. His friends were astounded and mortified, and Lincoln's head drooped in deepest humiliation.

Immediately after the speech, Johnson was put to bed, sick both mentally and physically. Several doctors were called in consultation, and an effort was made to alibi Johnson's condition as a temporary insanity. The doctors, however, refused to falsify the facts of the situation. After a few weeks, he was taken to Silver Spring, the estate of F. P. Blair, where he had an opportunity to rest and recover his strength and to give rumors and wild talk a chance to die down. This incident was the source of many accusations that Johnson was a drunkard. Later events, however, proved that this reputation was entirely without justification, and Johnson never afterward had or served liquor, either at his home or in his office at the Capitol.

Johnson, as Vice President, was another intended victim of the plot that resulted in the assassination of Lincoln. When Booth called together his conspirators, Atzerodt was assigned to the job of assassinating Johnson. Atzerodt refused, saying that he went into the conspiracy to capture but not to kill. However, he did make some preliminary moves toward kidnapping Johnson. On April 12, Atzerodt had Johnson pointed out to him and found out the number of his room at the Kirkwood House. On April 14 he procured a room at the same hotel in order to keep an eye on Johnson's movements. During the twenty-four hours preceding Lincoln's assassination, Atzerodt spent practically all his time between Johnson's hotel room and the bar, drinking heavily to bolster his courage. At the appointed time, however, either moral scruples or cowardice kept him from making any effort to kill Johnson.

Immediately after the trial of Mrs. Swiatt, another of the conspirators. President Johnson suffered a very severe pain in his side and groin, a recurrent attack of kidney stones which had plagued him for a long time. This time the pain was so severe during the passage of the stone through his ureter that opiates had to be given. He was in bed for one week and was forced to cancel Cabinet meetings and all appointments at his office. In the following years he had several subsequent attacks of urinary calculi.

About ten days after this spell of illness, although he was still having pain and a severe headache, Johnson went on a boat trip up the Potomac on the steamer *Dow*. This excursion proved very beneficial, but he continued to be pale and greatly weakened physically. During the remainder of July the extreme heat and humidity for which Washington is famous did Johnson's health no good. It was generally rumored that Johnson had a stroke during this period, but there is no evidence either to support or deny this hypothesis. In view of later events there is some possibility that the story may have been true.

Johnson's daily routine while he was President was work and more work. He arose at six in the morning and wrote, read, or studied until ten; then interviews for an hour; then lunch. If possible he took a walk at three o'clock before his dinner at four. From five o'clock usually until midnight, he worked in his office, with an intermission for tea or coffee with his family at eight o'clock in the evening. The ordinary, inevitable worries of a man in high office were augmented in Johnson's case by personal troubles and the disturbed state of the nation. His son, Robert, became a drunkard and was finally sent to Liberia to investigate the African slave trade. Johnson was also plagued by a nasty rumor that he was the illegitimate son of a gentleman of some distinction, although no two people could agree on the identity of this man. Through it all he worked under the terrible handicap of the disloyalty and unfaithfulness of his Cabinet members, especially Edwin M. Stanton. When he removed Stanton from his post of Secretary of War, the House of Representatives replied by impeaching Johnson; and although he was finally acquitted, the obvious antagonism of Congress must have been a heavy burden to his spirit.

During the last few months of Johnson's stay in the White House, he relaxed considerably and really enjoyed life with his relatives and friends. His health at this time was perfect. When he left the presidency in 1869 it must have been with a sense of relief and anticipation of peaceful years to come. Even then he was not safe from violence, however. A few years later a young drunkard staggered into Johnson's room and attempted to cut the ex-President's throat. This attack was quickly subdued, but another, of a different nature, was soon to follow. In June, 1873, Johnson was stricken with cholera during an epidemic which spread over almost the entire state of Tennessee. Johnson's sickness passed into a state of crises, and he seemed surely to be dying. His strong resistance and robust health tilted the balance, however, and in three weeks he seemed definitely on the mend. Johnson pulled through safely but his recovery from this severe and devastating illness was never complete.

Two years later, when Johnson was sixty-six, he suffered the illness that was to be his last. On July 28, 1875, he started on a visit to a married daughter, Mary Stover, who lived at Carter's Station, Tennessee. The day was extremely hot, but he seemed to be in excellent spirits and enjoyed himself immensely with fellow passengers on the train. He was met at the station by relatives and driven in a buggy to the farm, which was a short way from town. After lunch, he was taken to his room by his granddaughter, Lilly Stover, and settled in a nice easy chair where he could gaze at the smooth waters of the Watauga River. They talked of many things and especially of Lilly's coming marriage. As Lilly left his room, she heard a heavy thud as though something had fallen heavily to the floor. Quickly returning she found her grandfather slumped on the carpet, apparently unconscious. A physician was called immediately, and he found that Johnson's entire left side was paralyzed.

Johnson rallied after this stroke, although his mind was confused and he kept talking of his tailor shop and of his many struggles in the past. Just about twenty-four hours later, however, he had another stroke and never again regained consciousness. Physicians were in constant attendance, but he gradually grew weaker until his death at 2:30 a.m. on July 31, 1875, from cerebral hemorrhage.

Johnson's career as President was essentially a tragic one. In spite of his unlimited faith in the people, they rejected his principles of reconstruction. Impeached for a violation of the Constitution to which he was intensely devoted, fate played him a peculiar trick when the Supreme Court in 1923 held the causes for his impeachment unconstitutional. The story of Andrew Johnson lends a special significance to Thomas Carlyle's famous quotation: "The history of mankind is the history of its great men; to find out these, clean the dirt from them, and place them on their proper pedestal, is the true function of a historian."

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Ulysses S. Grant

1822-1885

FOR many years after the Civil War had ended, it continued to have great influence on the country's choice of Presidents. Ulysses S. Grant was thus a sure-fire candidate in the first national election after Lincoln's death. He was both a hero of the Union army, the man who had forced General Lee's surrender at Appomattox, and a Republican, a member of the party that Lincoln had brought to widespread popularity. Like Lincoln, too, he was a man of the people, descended from generations of early American settlers. His parents, Jesse R. Grant and Hannah Simpson Grout, were living in a little town called Point Pleasant in Clermont County, Ohio, when young Hiram Ulysses was born on April 27, 1822.

Grant's boyhood was similar to that of any country lad of his time. There is no record of any childhood illnesses or injuries, although on one occasion he almost drowned when he slipped off a log in the river. The current carried him swiftly downstream, but he was pulled out just in the nick of time near an embankment. Grant's major preoccupation as a boy was horses. Even at the age of six he was a fearless rider, and at twelve he had broken many colts and was an expert driver. It may have been his quiet gentle disposition that gave him his wonderful control over horses. Although he was fond of all outdoor sports and games, he was more apt to be found by himself or in a stable or pasture with his animal friends.

As he grew older, Grant became broadshouldered, well built, and muscular, but never very tall. On May 31, 1839, when he was seventeen, he entered the Military Academy at West Point and stayed there the full four years. It was there that a curious accident changed forever his christened name. The congressman who made Grant's appointment evidently confused young Hiram Ulysses with his brother, Simpson, and as a result Grant was registered on his admission blank as Ulysses Simpson Grant. The mistake was never corrected and thereafter Grant adopted it as his official name.

During his West Point career, Grant was never a leader in classes or activities, but here again was known for his horsemanship. He never chewed or smoked tobacco, which seems rather strange in view of the fact that in later years he had a cigar in his mouth almost constantly. During his last winter at West Point, Grant developed a severe and persistent cough which was accompanied by hoarseness and a drastic loss in weight. At graduation he weighed 117 pounds, having lost 20 pounds within a

few months. This illness was diagnosed as "Tyler's gripe," but when one considers the fact that two uncles on his father's side and a brother and sister younger than himself all died of pulmonary tuberculosis, it seems unquestionable that Grant, too, had contracted the disease. An incipient tuberculous lesion of the lung, with a possible extension into the larynx, was no doubt the cause of his cough. On being called into active service, however, the young lieutenant kept out of doors practically all the time, and in May, 1844, one year after his graduation, he had apparently recovered fully from all signs of tuberculosis.

In August, 1848, Grant married Julia Dent in St. Louis. To this union were born three sons and one daughter. It is interesting to note that Mrs. Grant had a convergent strabismus, commonly called "cross eyes," but was never operated on because of the strenuous objection of her husband. Grant himself was not considered a particularly handsome man. In adult life, he was described as being short (5 feet 7 inches), sturdy, muscular, quiet, and rather ordinary looking. He had clear blue eyes, heavy jaws, round shoulders, and wore a scrubby beard.

Grant's rather unmilitary appearance was belied, however, by his fine record as a soldier and officer during the Mexican and Civil Wars. As might be expected, he was exposed to many hazards besides enemy bullets during his army career. In 1852, while he held the rank of captain, he was ordered to take a large detachment of troops from New York to the west coast via the Panama Isthmus. While they were in Central America, an epidemic of malaria, followed by cholera, broke out among the troops, and of the 700 men, 110 died. Grant, however, escaped serious infection and did not lose a single day from duty. Several years later, in November, 1861, Grant narrowly missed death in the pilot house of a boat when a bullet went right through a sofa on which he had been lying just a moment before.

On April 4, 1862, Grant was riding horseback in the dark when his horse slipped and fell, pinning Grant's leg under its body. His ankle became so swollen that his boot had to be cut off, and for several days he could walk only with the aid of crutches. Again in August, Grant was thrown from a horse, and this time he was knocked unconscious. His leg was swollen from the knee up to the hip, and the edema extended along the side of his body to the armpit. He suffered intense pain and was unable to leave his bed for a week. Then he was carried on a litter to a steamer, which took him to Vicksburg, where he spent several weeks convalescing. His back was evidently injured, too, for one account of this accident states that his entire body was immobilized for several weeks.

Three years later, General Grant escaped possible assassination when he declined an invitation to accompany President Lincoln to Ford's Theater in order to be with his wife and children at Burlington, New Jersey. During Grant's own eight years as President, his good health was uninterrupted and remained so for many years afterward. In December, 1883, however, when he was sixty-one years old, he slipped on an icy

sidewalk near his home in New York City. At first his injury was considered a bad sprain of the hip joint with a possible dislocation, but the long duration of his convalescence makes it apparent that there must have been a fracture of the head of the femur (thigh bone). Walking was very difficult and painful for him, and he was forced to use crutches at all times. It was not until the following summer that he was able to be outdoors.

Grant's final illness had its inception during the spring of 1884. He first noticed spasmodic contractures in his throat, followed in a few weeks by pain of a stabbing character. In his own words, Grant "observed upon eating fruit, that my throat was sore, and that peaches particularly, of which I was very fond, gave me great trouble." Mrs. Grant insisted that he see Dr. Da Costa of Philadelphia who referred him to his general practitioner, Dr. Fordyce Barker of New York City. Unfortunately, Dr. Barker was in Europe at the time and did not return until October 15, 1884, more than three months later. It is problematic whether this delay was responsible for the fatal outcome of the disease, but Grant might well have profited from the modern warning to "Fight Cancer Early."

When Dr. Barker had seen Grant he sent him with a letter of introduction to Dr. John Hancock Douglas, one of the foremost throat specialists of the times. Grant's previous medical history, as given to Dr. Douglas, was itemized as follows: (1) difficulty in swallowing certain substances; (2) severe and persistent cough while in his last year at West Point, from which he recovered completely after living out of doors for several months (the fact that he probably had a tuberculous lesion in his larynx at that time was pertinent to his present condition); (3) a family history of longevity; (4) severe migrainous headaches at fairly regular intervals; (5) one leg shorter than the other because of an injury to his hip, after which, during confinement in bed, he had pleuro-pneumonia and general debility; and (6) mental shock and weariness from a financial disaster.

Examination of a rather superficial character revealed a very deeply congested velum (red and swollen soft palate) and induration (hardened inflammation) on the right side of the tongue near its base. Apparently no examination was made of the larynx. Grant was then told that he had cancer but that the prognosis was not altogether hopeless. Later, a more detailed report was given:

"The disease is by no means as extensive as is generally believed. In fact, the ulcerations, small in extent, are limited to the right pillars of the fauces [tonsil area], the anterior one being perforated at its base. The adjoining right side of the roof of the tongue is indurated to a slight extent, as is also a neighboring gland under the angle of the jaw on the right side of the neck. The roof of the mouth, along the line of the hard palate and to the right of the median line, contains three small warty-like excrescences, which show a tendency toward cell-proliferation. The epiglottis is free from any abnormality, as are all other parts of the throat."

Local treatment as instituted by Dr. Douglas consisted of washing the

throat and mouth with astringent and antiseptic solutions to remove debris and its odor from the diseased tissues; irrigations for mechanical cleansing; treating the ulcerations with silver nitrate, hydrogen peroxide, and dusting with iodoform powder; and an order to stop smoking. Grant and his family and attendants carried out these instructions implicitly.

This treatment was continued for several months without change until the late winter of 1885 when several complications occurred. Grant began to suffer from an intermittent loss of voice, probably due to an extension of the inflammation and edema into his larynx. The ulcerations on his tongue and in his larynx gave him pain on talking and swallowing, and the encroachment of the tumor mass adjacent to the larynx made breathing difficult. In addition, he began to have severe neuralgic pains throughout his head and in his ear. At this time a rather detailed bulletin was issued by the physicians in charge:

"Although the induration of the tongue has existed more or less since last fall, when the patient was first seen by Dr. Douglas, the ulcerations have appeared quite recently. It was during their progress that the General suffered from pain in the right ear, which now has been entirely relieved by the local application of a four per cent solution of cocaine. Under the same treatment all pain in deglutition is now entirely controlled, and the patient is kept in a very comfortable state. The pulse which is normally sixty per minute, occasionally reaches eighty beats. The bodily temperature is normal. The appetite is fair, which is saying everything in its favor, as the General is not a hearty eater. His bodily condition is, however, much below par, and is more to be considered at present than the local disease. The treatment of the case has been judiciously conservative from the start. The fluid extract of cocaine is administered internally and iodoform is dusted upon the ulcerations. Contrary to the general impression, the tongue itself is not ulcerated, nor has it been, as far as we can learn, at any time during the progress of the disease. The troublesome tooth said to have been extracted for the relief of lingual ulceration was on the opposite or sound side of the mouth, and was removed to relieve a persistent ache of the left ear."

A very complete record of the microscopic examination of specimens removed from General Grant's throat was given by Dr. George R. Elliott in March, 1885:

From numerous inquiries that have been made of me regarding my microscopic examination of the specimens removed from General Grant's throat, and from the great interest manifested in his case, I have consented to place before the medical profession the data upon which the diagnosis rested.

When the importance of using the microscope to determine the exact nature of the malady became apparent, I was invited by Dr. J. H. Douglas to assist him, and he then sent me some scrapings from the surface of the little sore on the right posterior pillar of the fauces. These little particles I carefully prepared in the usual way and examined with the microscope. Little, however, of definite value could be made out, because the specimens had, unfortunately, been allowed to dry up before they came into my possession. They were consequently useless for purposes of microscopic examination.

On the morning of February 18, 1885, the importance of a further and more satisfactory investigation was suggested to General Grant, and the necessity of removing a small piece of the diseased tissue for that purpose was made known to him. Consent was readily obtained. I was then permitted to see the extent of the gross lesion, and was furnished with a history of its development.

Preliminary to cutting off any of the diseased tissue the throat was sprayed with a four per cent solution of hydrochlorate of cocaine, which allayed, to a great extent, the irritability of the affected tissue. A piece as large as a small pea was then removed by Dr. F. C. Riley, from the ulcerated edge of the posterior pillar of the fauces. The removal took but a moment, and gave the patient little discomfort. The specimen was placed at once in alcohol and water, equal parts, for the purpose of hardening it. After immersion for twenty-four hours, the specimen was transferred to absolute alcohol, in which it was kept for twenty-four hours longer, when it was found possible to make thin sections. The latter were stained, in order to bring out more clearly the minute component parts. The staining reagents used were haematoxylon, Bismark brown, and haematoxylin and eosine. Subsequently these sections were mounted on glass slides in Canada balsam.

I found that the tissue examined was composed largely of epithelial elements, grouped frequently under the form of distinct lobules. The cells forming these lobules lay in close contact, and showed a marked tendency to be arranged in concentric globes or "nests." This latter arrangement of epithelia is characteristic of that form of cancer known as epithelioma.

Most of the globes were found to be in the early stage of formation. I do not wish to be understood as basing my diagnosis of epithelial cancer upon these globes or nests only, but in connection with other pathological and clinical data I regard their presence as highly significant.

Marked multiformity in the shape of the epithelial elements was another of the important findings in the specimens under examination, while distinct evidences of cell-proliferation were seen in the Malpighian layer. By the above is indicated a tendency of the new cell-formation to burrow into the deeper parts of the underlying tissues. Extravasations of blood were also found among the epithelia. This condition I regard as pointing to a low vitality of the newly developing growth, and cell dissolution, leading to rupture of the capillary blood channels, by which their contents escape into the surrounding tissue. Finally, in some parts of the diseased tissue a fibrous framework was found.

By way of summary, then, the more or less lobulated appearance of the epithelial mass; the actual existence of some "cell-nests"; the great diversity in the shape of the cell elements; the marked evidences of epithelial proliferation, and the peculiar appearance of the stroma, warrant the diagnosis of epithelioma of the squamous variety.

This conclusion has been arrived at, after the greatest possible care had been taken to exclude all possibilities of error; after an exhaustive study of every detail, with a knowledge of the clinical history of the case, and this, too, with a mind anxious only to find microscopical evidence that the disease was of a benign or innocent nature.

Since sending in my first report I have shown the specimens to Dr. T. E. Satterthwaite, the well known pathologist, and he fully corroborates my diagnosis. I have also, upon request, shown the same specimens to Drs. Fordyce Barker and J. H. Douglas, the eminent gentlemen in charge of the case, and to Drs. Henry B. Sands and George F. Shady, the consulting surgeons, all of whom appreciated the significance of the appearances, and expressed themselves accordingly . . .

On April 7, 1885, Grant had a very severe hemorrhage when an artery in the diseased tissue eroded. The task of stopping it was a difficult one, and his physicians were almost certain that he would die. He was given digitalis for the heart, and cocaine solutions were freely applied to the entire region. Morphine was injected hypodermically at frequent intervals. Such a hemorrhage from the deep tissues of the pharynx is a very serious complication, whether it springs from tumor tissue or an abscess. The treatment for such a condition today would be surgical—a ligation (tying

off) of the common carotid artery of the same side. This procedure involves some risk because of damage to brain tissue, but undoubtedly has saved many lives.

Beginning April 8, Grant's dosage of opiates was gradually reduced, and an announcement on April 15 stated, "He does not require so much morphia now; only six grains were injected today instead of the customary ten." He also grew more quiet, and a thorough examination revealed less inflammation and pus in the tissues of the tongue. However, there was a very considerable extension of the tumor mass into the hypopharynx and epiglottis, and an increasing involvement of the thyroid cartilage of the larynx.

On June 16, 1885, Grant's cervical glands had grown so large that he had to wear a muffler to hid his appearance from the curious public. He was terribly emaciated and was still unable to walk without the aid of a stout cane. In one week, his weight fell from 140 to 130 pounds, and this loss of weight continued until his death. On June 27, 1885, Grant was moved to Mount McGregor, New York, near Saratoga Springs. Ten days later he wrote a long letter to Dr. Douglas in which he predicted his imminent death, which he felt would come either through hemorrhage, strangulation, from obstruction in his throat, or exhaustion. He realized that the first two might come at any time, and that the time of arrival of the third could be computed with almost mathematical certainty. He reiterated his strong faith in Dr. Douglas and expressed a wish that there be no further consultation by other doctors, since any measures now could only prolong his agony.

At about this time Grant also scribbled a dissertation on the use of cocaine, knowing that he had become addicted to it. Briefly, his thesis was that cocaine, when taken properly, gave wonderful relief from pain. The parts treated became numb and partially paralyzed, causing an unpleasant but not painful sensation. He also noticed a tendency to take the drug in larger quantities and oftener than was necessary, but he fought bravely against this desire.

On July 21, Grant had a severe spell of hiccoughing, and "spirits of morphine" were given for its relief. The following day Grant wrote on a pad that he wanted to be put to bed. This request was significant of his approaching death, for during the past several months he had slept in an easy chair to prevent choking and to make breathing easier. On the evening before his death his hands and feet became icy cold, and his pulse was rapid and very weak. During the night he became cyanotic, breathing with quick, shallow respirations, and edema of the lungs soon followed. The only way he could take liquids was by means of a moist sponge placed in his mouth, but repeated injections of brandy were given during the night.

At 8:08 a.m. on July 23, 1885, Grant died very quietly at the age of sixty-three. The cause of his death was a carcinoma of the tongue and tonsil with extension of the growth into the hypopharynx and larynx.

It is very possible that this condition was complicated by a resurgence of an old tuberculous ulcer in the larynx.

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Rutherford B. Hayes

1822-1893

RUTHERFORD B. Hayes, like Grant, was born in Ohio in the year 1822. His parents, Rutherford Hayes and Sophia Richard Hayes, had settled on a farm by the Olentangy River near Delaware, Ohio. It was here that young Rutherford was born on October 4, 1822, less than three months after his father died of an acute infectious disease, probably malaria. The baby was so feeble that he was not expected to live more than a month or two at the most. However, under the very careful guidance and care of his mother, his older sister, Fanny, and his uncle, Sardis Birchard, he gradually gained in strength.

As a boy, Hayes was rather delicate physically, but had a very stable nervous system with no trace of neurosis. As a young man he was somewhat worried by the fact that some of his relatives had gone insane, but Hayes' own mental health was always admirable. As a matter of fact, an outstanding feature of Hayes' character from boyhood on was his complete normality. On one occasion when he was still a young boy, he broke through the ice while skating, but even then he remained very calm until rescued by his companions. He was never caught in any scrapes and never had any wild oats to sow. Most of his youth was spent at his Uncle Sardis' home, where a spacious lawn and a winding stream nearby provided an adequate playground for all the boyish games and sports of which he was so fond. He helped to gather maple syrup in the maple grove, and in the surrounding wooded country he picked cherries, apples, and nuts in season. When a little older he became an expert with the rifle and spent a good deal of his time hunting and fishing. He was even more devoted to swimming and skating, however, while among indoor pastimes his favorite was chess.

During his years at Kenyon College, Hayes was a champion runner, apparently tireless in physical activities, and never missed a day of school because of sickness. On one of his Christmas vacations, he walked through four inches of snow from college to his home—a distance of forty miles—in twelve hours. When he was nineteen, he developed a slight cough which worried his mother a good deal, and in a teasing letter he told her that his doctors hoped his life might be prolonged a few years "if I will stop drinking, regulate my diet, keep out of the cold, and entirely refrain from laughing." While studying law at Harvard, he hurt several fingers playing baseball—no gloves were used in those days—and subsequently concluded that it was a childish game for a man of twenty-one.

In 1847, when Hayes was twenty-five and practicing law in Lower

Sandusky, Ohio, he developed frequent attacks of sore throat. His family doctor prescribed a warmer climate, but on consulting two Cincinnati physicians, Drs. Mussey and Dresbach, Hayes was given a very thorough examination and advised that a trip to Mexico would not help matters and that enlisting in the army, which he was considering at that time, would be definitely bad for his weak throat. They were also rather apprehensive of an incipient pulmonary tuberculosis. After pondering their advice for almost a year, Hayes finally decided to go south. He made an extended tour of Texas and apparently regained his health completely. However, in the fall of 1849, during the first spell of cold weather he developed quinsy—peritonsilar abcess. Rest, cathartics, and cod liver oil were the remedies used to combat this sickness.

On December 20, 1852, Hayes was married to Lucy Ware Webb, and to this union seven sons and one daughter were born. After his marriage, he settled down to the practice of law in Cincinnati, Ohio. When the Civil War broke out, however, Hayes, like so many other men of his generation, left his career to serve the Union. On September 24, 1862, while he was a colonel of the Twenty-third Ohio Regiment in McClellan's army, he was severely wounded at the battle of South Mountain. He had given a command to charge for the second time when he felt a stunning blow and found that a bullet had struck his left arm just below the elbow, fracturing the bone. A nearby soldier, seeing the profuse hemorrhage, tied a handkerchief above the wound under Hayes' direction. Weak and faint from loss of blood, Hayes was forced to lie down, and although he struggled to his feet a short time later, he could not stand and immediately fell again. Several bullets struck the ground close to his head before he was carried off the field by a Lieutenant Jackson. He was finally revived with cold water and brought to Dr. Webb, his brother-in-law, who dressed the wound and made him comfortable. Colonel Hays was then taken to the residence of Captain Jacob Rudy in Middletown, Maryland, where he suffered constantly and got little sleep for a week or ten days. Nevertheless, he maintained a cheerful disposition throughout his entire convalescence, which was undoubtedly brightened by Mrs. Hayes' arrival to visit him.

During the battle of Fishers Hill and Cedar Creek, Hayes was galloping down a steep hill when his horse was shot from under him and he was thrown violently to the ground. He was stunned for a moment and badly bruised, and one ankle, which had caught fast in the stirrup, received a severe and painful wrench. On recovering consciousness, he managed to make his way to some nearby woods and then mounted his orderly's horse. He had already been missed, however, and a false rumor spread that he had been killed. Fortunately, this rumor was soon scotched by Hayes' reappearance, but on this occasion, as on others, it might well have been true. Before the Civil War was over, Hayes had been wounded four times and had four horses shot from under him.

Some time later, Hayes mentioned in his diary an incident which occurred while he was riding on a new train between Buffalo and Philadelphia. At one station a cannon was fired too soon in announcing his arrival, and

the shot shattered a window at his side. The flying glass cut his forehead and face, but the injuries were not serious and were treated on the spot.

Following the Civil War, Hayes was elected to the House of Representatives and served several terms as governor of Ohio. When he was elected President in 1877, he was fifty-four years old and in the prime of life. He was a handsome man, 5 feet 8½ inches tall, broad shouldered and weighing from 170 to 190 pounds. He was strong and vigorous physically, very fond of outdoor sports, and an expert rifleman. His head was large and his features mobile and expressive. He had a high forehead, straight nose, firm lips, and a perfect set of teeth. His eyes were blue and deeply set under arched brows. He never wore glasses, probably because in his young manhood his eyes were moderately myopic, or near-sighted, this condition being neutralized by the presbyopia of senility in later life. He was gentle in manner and speech, but his voice had resonance enough to give it great carrying power.

During the first part of Hayes' term as President, he received many letters threatening his life. One evening while the family was at supper in the White House, there was a crash of breaking glass and a bullet passed through the window and its shade, through two rooms, and finally lodged in the library wall. Hayes and his family were unhurt, but thereafter his son, Webb, carried a revolver and acted as special bodyguard for his father. During the entire span of his presidency Hayes was in perfect health. He took gymnastic exercises every morning, followed by a brisk walk. He restricted himself to one cup of coffee at breakfast and one of tea at lunch, and he never used tobacco or alcoholic beverages.

After his retirement to his Ohio home, Spiegel Grove, Hayes followed a very rigid daily routine with regard to eating, exercise, and rest. He boasted that he always retired before it was necessary to turn on the gas lights at night. For many years his health remained good, although during his late sixties senile changes set in, especially in his mental condition. At times his memory became very poor and he lived in the past a good deal. An hereditary *nerve deafness* also impaired his hearing to a marked degree. His hair and beard became white, his step slackened, and his figure thickened.

In the early part of January, 1893, while on a trip to Columbus by train, Hayes developed a bad head cold and cough, as a result, it was thought, of a draft in the smoking room of the train. A few days later he was in the depot at Cleveland when he had a sudden attack of pain in the chest, attended by nausea and shock. His son, Webb, obtained brandy for him and this somewhat relieved the intense pain, which he described as being like that he had suffered after his severe wound at South Mountain. Webb urged him to return to Mrs. Austin's, at whose home he had been visiting, but Hayes refused. He longed to be at home. "I would rather die at Spiegel Grove," he declared, "than live anywhere else." He was made as comfortable as possible in the drawingroom of the Pullman car and reached Fremont at seven in the evening, still in great pain but no worse for the

journey. Dr. Hilbish, the family physician, who had been forewarned by telegraph, met the train and accompanied the sick man to Spiegel Grove. It was with a sigh of satisfaction that Hayes presently found himself in his own room and bed, but he was never to leave them alive.

Hayes' physician did not at first apprehend a fatal termination of the malady. But although he did all that medical science could suggest, remaining almost constantly with his patient, the ex-President's weary heart did not regain its vigor. His suffering was greatly relieved by sedatives, but he chafed at being confined in bed—his first experience of the kind in more than thirty years.

On January 18, 1893, there seemed to be a change for the better and hope was quickened, but after ten o'clock that night his condition became rapidly worse. At about eleven, Hayes passed painlessly into the endless sleep at the age of seventy, succumbing to a coronary thrombosis following an acute upper respiratory infection.

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James Abram Garfield

1831-1881

JAMES Abram Garfield was the last Republican President to be elected on the momentum of Civil War partisanship, or, as the disgruntled Democrats of the period put it, to be wrung from the bloody shirt. Lincoln had started the era of Republican supremacy, and Grant, Hayes, and Garfield followed in his wake. These three Presidents had many characteristics in common besides their allegiance to the Republican party, characteristics that had much to do with their popular political success. They were all of comparatively humble origin, all had served as officers in the Union army, and all were born in Ohio, that liaison state between the East and the West.

Garfield's Ohio birthplace was the town of Orange in Cuyahoga County, where he was born on November 19, 1831. He was the youngest of three children of Abram and Eliza Ballou Garfield. When young James was only eighteen months old, a forest fire broke out near the Garfields' log cabin home and James' father worked all day fighting it. That evening Mr. Garfield, thoroughly exhausted and overheated, was sitting in his cabin doorway to rest when he suddenly developed a sore throat followed by repeated chills. A neighboring settler applied a poultice which seemed to aggravate rather than help his condition. That night he developed pneumonia, and within a few days he was dead. Thus James began his life under conditions of hardships even greater than usual on the frontier.

During most of his boyhood, Garfield had little experience of sickness. He was a fearless, good-natured boy with an excess of physical energy. He was rather large for his age, very strong, and athletic. When he was fifteen years old, he hired out as a helper on a canal boat. During this apprenticeship he fell into the river fourteen times, and on one occasion was almost drowned. A few weeks after his last immersion he developed a severe attack of the "ague." Severe and frequent chills left him in a state of considerable exhaustion, and the disease increased in virulence day by day until the captain was finally obliged to send him home to his mother. There he was bedridden for weeks, and Mrs. Garfield gave him the ordinary home remedies until forced to call a physician from a neighboring town. The doctor administered large doses of calomel until his patient was thoroughly salivated, a treatment which apparently caused more suffering than the disease itself. A day or two later, James complained of a hard bunch on his left side. His mother called it "ague-cake," but it was probably an indurated area of cellulitis. The localized inflammation was so tender

that he was unable to move in bed, and it was many weeks before he completely recovered.

At twenty, Garfield was 6 feet tall, powerfully built, and weighed 185 pounds. He had a large head with bushy hair, and during most of his adult life wore a full beard. Temperamentally, however, he was not as tough as his massive frame might have suggested. When he was twenty-one, he had several months of severe mental depression, bought on primarily by a love affair which was broken off and also by changes in his spiritual life. When this emotional storm died away, he regained his poise to a great extent, but the effects of this tremendous inner upheaval affected his life for many years. During his college days there is no mention of any physical illness, other than an injury sustained in a class rush, but he passed two years of extreme depression and unhappiness, which he and his wife referred to in later life as the "black time" or the "years of darkness." His wife, Lucretia Rudolph Garfield, whom he married in 1858, undoubtedly did much to restore him to happiness, and the advent of their four sons and daughter was probably another stabilizing influence.

During the first part of the Civil War, from 1861 to 1862, Garfield served with the 42nd Ohio Regiment and had many struggles with disease. All their water supplies were polluted, and consequently their camp was rife with intestinal infections, mostly typhoid, "camp fever," and dysentery. Garfield suffered as much as his men, and there was no more adequate treatment available than baths, soaking of the feet, and "hygiene pills." Garfield's digestion was always his weak point. Even when at home he had successive attacks of digestive tract disorders, and after entering the army he suffered especially from dysentery. Careful diet and attention to sanitary conditions would sometimes free him from this trouble for months, but before long the attacks would inevitably be renewed. One particularly severe attack of camp fever in 1862 compelled him to accept a furlough and go home to Ohio for convalescence. At another time he wrote home: "The yellow (jaundice) has pretty nearly disappeared from my skin, and I am feeling quite restored except in my strength, and in that I am gaining." Involvement of the liver was quite common following these recurrent intestinal infections, and would explain his suffering from jaundice. At the end of his army service he had nothing to show except the rank of brigadier general, a damaged constitution, and a profound distrust of the ability and real political loyalty of the officers under whom he served.

After leaving the army, Garfield entered Congress and served first in the House of Representatives and then in the Senate until he was elected President in 1880. During the early months of his administration, Garfield tried hard to find some means of diversion and exercise. The numerous personal callers and office seekers taxed his strength to the utmost, and he developed a persistent insomnia. This condition finally disappeared after much horseback riding and frequent excursions into the country.

Uncertain though his physical health was, it was not disease, but violence, that brought Garfield's life to its tragic and premature close. The

story of his assassination begins on the morning of July 2, 1881, when a man entered the Baltimore and Potomac depot in Washington, D. C., and mingled with the crowds. He was short and solidly built, fair haired, although nearly bald, and wore a light mustache. His blue suit with its sack coat was clean and neat, his derby hat in good condition, his bearing a little arrogant and almost distinguished. Certainly it would have been impossible to detect from his appearance the dark purposes of his mind.

Shortly after nine o'clock, President Garfield also entered the railway station, arm-in-arm with his Secretary of State, James G. Blaine. They were talking in friendly animation as they prepared to join other members of the Cabinet on a pleasant journey to New York and New England. Their itinerary was to include a pause at Williams College, where Garfield had been president, and a trip through the cool invigorating air of the White Mountains. Neither Garfield nor Blaine noticed the man who had entered earlier and was now standing by the double row of benches a little to the left of the door. They intended going through the ladies' waiting room into the larger general one beyond, but as they passed within a few feet of the stranger he suddenly produced a pistol and fired two shots at Garfield.

One shot grazed Garfield's right arm, while the other struck him in the back near and to the right of the spine. He collapsed and was carried to an office room in the building. Dr. Smith Townshend, the district health officer, was the first doctor on the scene, arriving four minutes after the shooting. Several other doctors were hastily called for consultation. Their examination revealed a very feeble pulse with a rate of forty beats a minute and slow and sighing respiration at a rate of fourteen a minute. Garfield was very pale and his skin was covered with a clammy perspiration. The doctors agreed that he must be bleeding internally and probably would not survive the night. He was moved to the White House, there to await the death that seemed inevitable.

Much to everyone's surprise, however, Garfield rallied very definitely the following morning. The doctors now decided that his collapse had been caused not by internal bleeding, but by the fact that the bullet had struck the spinal column and torn through part of it without actually touching the spinal cord, thus inflicting a violent shock on the entire nervous system. Garfield was still well enough to select Dr. D. W. Bliss as his physician in charge, and Dr. Bliss in turn asked five men to join him: Surgeon General J. K. Barnes, U.S.A.; Dr. J. J. Woodward, U.S.A.; Dr. Robert Reyburn, a local surgeon; Dr. D. H. Agnew, a Philadelphia surgeon and professor of surgery at the University of Pennsylvania; and Dr. F. H. Hamilton, a New York surgeon. Their conclusions were (1) that the bullet hit the vertebral column and then two ribs, being then deflected in an unknown direction; (2) that no important internal organ had been penetrated or evenly badly bruised, and (3) that surgical interference should be attempted only in case of grave necessity. Treatment consisted of maintaining the patient's strength, meeting any indications of infection as they arose, and giving a very careful and thorough nursing care. Dr.

Susan Edson became Garfield's chief nurse and was assisted by Steward Crump of the White House staff.

Dr. Bliss made very complete records of the progress of Garfield's case, from the first examination until his final death. According to this report, the examination of Garfield immediately after the shooting revealed the appearance of complete collapse, with absolute immobility of his features, very shallow respirations (eight to ten per minute), a feeble pulse, and the presence of vomited material at the side of his head. He was given half an ounce of brandy and a dram of aromatic spirits of ammonia. On regaining consciousness his only complaint was a sense of weight and numbness, with pain in the extremities. The bullet wound was on the right side, four inches from the median line of the spine and on a line with the eleventh rib. Exploration of the wound with a probe revealed the fractured rib and macerated internal tissue.

After his removal to the White House, Garfield was placed on his right side to favor drainage from the wound. Small amounts of water were given, as well as a hypodermic of morphine, $\frac{1}{8}$ grain, and atropine, $1/80$ grain, to relieve the pain. The morphine was repeated at intervals. A well defined dullness was found in the region of the wound from hemorrhage and damage to the liver substance. Garfield was catheterized at six o'clock that evening, 6 ounces of normal urine being drawn. Bowel movements throughout his illness were normal and free from blood, except bleeding from hemorrhoids when an enema was given. Absorbent cotton soaked with phenol was kept in contact with the wound.

The next day, July 3, a slight tympanites, or distention of the abdomen, was detected, but there was no pain on pressure, nor any marked rigidity of the abdominal walls. Normal bowel movements dispelled any idea that peritonitis had developed. July 13 brought the first signs of infection, and on July 23, Garfield had a chill followed by a temperature of 104° . An abscess in his side was drained and some fragments of bone removed. On July 26, the incision was enlarged and more rib taken out. A third operation was performed on August 8 under ether anesthesia, and the previous incision was extended downward and a still deeper abscess was found and evacuated.

On August 14, Garfield had an attack of vomiting, high fever, and subsequent collapse, followed in a few days by a swelling of the neck and the right parotid gland, which became infected and abscessed, and resembled a large carbuncle. Several abscesses broke through and discharged through his mouth and ear. Other abscesses, including that in the parotid gland, were incised several times, but apparently this brought no relief. Accompanying this infection, Garfield suffered a facial paralysis which persisted until his death.

The possibility of malaria was considered at this time, but since tonic doses of quinine had been given regularly, it was discarded as unlikely. Numerous small abscesses continued to form on different parts of Garfield's body and in the axillae (armpits), and during the course of illness four

bed sores occurred over the sacrum. His diet at this time consisted principally of beef tea, beef peptones, and the yolks of eggs. On August 26, abscesses had developed in the external auditory canal and in the mouth.

Early in September, after a brief rally, Garfield was transferred at his own request to Elberon on the New Jersey coast, where he had temporary improvement. At about this time, Alexander Graham Bell attempted to locate the bullet by using an electromagnet, and Feneuil Dunkin Wiesse, the anatomist, also discovered its location by deductive methods. The conclusions of both men were disregarded, however, although the autopsy later proved them correct. As a wag remarked afterward, "When ignorance is Bliss, 'tis folly to be Weisse."

Before long, Garfield's condition again deteriorated. An inflammation of the mucous membrane of the mouth developed and extended by continuity to the pharynx, larynx, trachea, and bronchi. This was followed by bronchitis and hypostatic congestion in the right lung with limited bronchopneumonia. His chills and fever increased and were accompanied by a severe pain in the region of his heart. This latter was thought to be a coronary thrombus. By September 17 his pulse was fluttering, he had partially lost consciousness, and he had become terribly emaciated. His condition grew gradually worse, with intermittent spells of unconsciousness, and at 10:35 p.m. on September 19, 1881, he finally died.

The immediate cause of Garfield's death was for some time a matter of dispute among physicians, but those who were in charge of President Garfield's case, both at Washington and after his removal to New Jersey, made a post-mortem examination the day after his death. They were assisted by Dr. Andrew H. Smith of Elberon and Dr. D. S. Lamb of the Army Medical Muesum at Washington. The operation was performed by Dr. Lamb, and it was found that the ball, after fracturing the right eleventh rib, had passed through the spinal column in front of the spinal canal (Fig. 5). It had fractured the body of the first lumbar vertebra, driving a number of small fragments of bone into the adjacent soft parts, and had lodged just below the pancreas, about two and a half inches to the left of the spine and behind the peritoneum, where it had become completely encysted. The immediate cause of death was a secondary hemorrhage from one of the mesenteric arteries adjoining the track of the ball. The blood had ruptured the peritoneum (lining of the abdomen) and nearly a pint had escaped into the abdominal cavity. This hemorrhage is believed to have been the cause of the severe pain in the lower part of the chest that Garfield complained of just before his death.

The autopsy also revealed an abscess cavity, six by four inches in size, in the vicinity of the gall bladder between the liver and the transverse colon, which were strongly inter-adherent. It did not involve the substance of the liver, and no communication was found between it and the wound. A long suppurating channel extended from the external wound between the loin muscles and the right kidney, extending almost to the right groin. This channel is now known to have resulted from the burrowing of pus from the

wound, but while Garfield was being treated it was supposed to have been the track of the ball. On examination of the organs of the chest, evidence of severe bronchitis was found on both sides, with bronchopneumonia of the lower portions of the right lung and, to a much less extent, of the left.

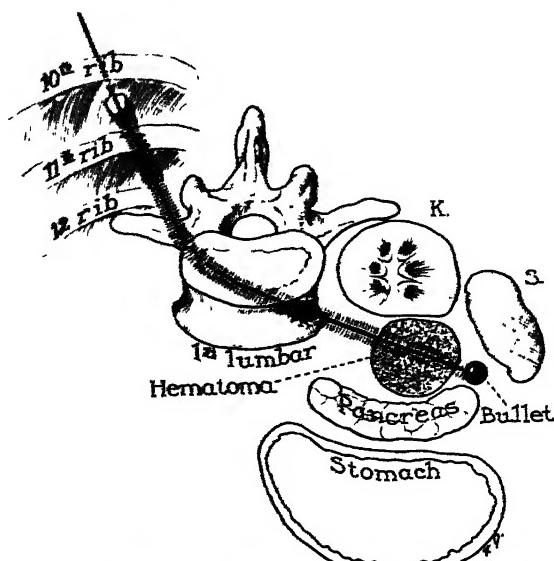


Fig. 5. The approximate course of the bullet through the body of Garfield. Drawing by Russel Drake in "Gunshot Wounds of Three Presidents of the United States," by S. B. Harper.

The lungs contained no abscesses and the heart no clots. The liver was enlarged and fatty, but was likewise free from abscesses. None were found in any other organ except one kidney, which contained near its surface a small abscess, about one-third of an inch in diameter. Considering these post-mortem discoveries, it is quite evident that the different suppurating surfaces, and especially the fractured spongy tissue of the vertebrae, furnish a sufficient explanation for the septic condition which existed.

The primary cause of Garfield's death was septicemia, or blood-poisoning as it is commonly called, with metastatic abscesses. Contributing causes were: (1) rupture of a mesenteric artery by the bullet, followed by a hemorrhage into the peritoneal cavity; (2) bronchopneumonia, and (3) coronary thrombosis.

The history of gunshot wounds of the body of the vertebra up to the time that Garfield was shot indicates that the great majority of those so wounded died, no matter what treatment was given. Where the spinal canal itself was invaded by the bullet, death was almost certain. Nevertheless, the digital exploration of Garfield's wound, which was performed several times during the first twenty-four hours, without sterile gloves, was a distinctly questionable procedure. Modern treatment of such a wound would include the use of sulfonamides or penicillin to combat the infection, and intravenous

saline or dextrose solutions and blood transfusions to help to support the patient's strength. Today, the rupture of a mesenteric artery is a condition which is considered to require an emergency operation, and the vast experience gained by treating such wounds in World War II has made the prognosis in such cases excellent. It seems very probable that modern medical science, by the use of skillful surgery, new and effective drugs, and intravenous injections, could have saved Garfield's life and allowed him to complete a full span of useful years.

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Chester Alan Arthur

1830-1886

CHESTER Alan Arthur, the oldest son of Rev. and Mrs. William Arthur, was born in Fairfield, Franklin County, Vermont, on October 5, 1830. He was a bright, impulsive, active boy, and a leader in sports and adventures, especially if they involved an element of danger. He grew up to healthy young manhood, and suffered from no serious illness until well into middle life. On October 29, 1859, when he was twenty-nine years old, he married Ellen Lewis Herndon of Fredericksburg, Virginia. They had two sons, one of whom died in infancy, and a daughter who later married Pinkerton, the famous detective.

In adult life, Arthur was a tall, heavy-set, well-proportioned man of distinguished appearance, and was considered one of the best dressed of the Presidents. He had a rather large face, high forehead, large brown eyes, a slightly bulbous nose, and during most of his life wore a mustache and side-burns. He was courteous, cultured, and dignified, and very well liked by his associates. He had a strong mind, good literary taste, and a retentive memory. His main recreations were fishing and hunting. He had all the qualities of a good fisherman, including patience, enthusiasm, and skill. He could pitch a tent quickly, cast a fly deftly, and fight a salmon with great artistry. His favorite fishing haunt was the Restigouche Fishing Club in Canada.

When Garfield was assassinated in 1881, Arthur, who was then Vice President, succeeded him. Mrs. Arthur had died about a year previously, and during Arthur's administration, his sister, Mrs. McElroy, acted as hostess for him and maintained a gay and festive atmosphere in the White House. This period of heavy eating and drinking and continuous rounds of parties probably had much to do with Arthur's later poor health. He was under almost constant medical care during the last year of his term. In April, 1883, worn out by the winter's social duties and his work as President, he went to Florida to recuperate. On his way back he spent several days in the lowlands and was stricken with an acute attack of malaria. His stomach rejected all food, and chill after chill followed in quick succession. On the way to Washington, he became worse and his symptoms grew alarming. When he finally reached the White House, he was a very sick man, and it was several weeks before he recovered from this illness. Subsequently he suffered from frequent attacks of indigestion, and even the simplest articles of diet caused him great discomfort and pain.

At the end of Arthur's presidential term in 1885, he was no longer forced to attend to the calls of society and business, and was able to enjoy a period

of relaxation which did him a world of good. Afterward he went into the law firm of Knevals and Ransom, and for a time worked energetically, but soon his strength gave way and he was obliged to retire permanently from work. Even then his health did not improve, and he continued to suffer from severe dyspeptic attacks which were followed by periods of great mental depression. A long sea voyage brought about temporary relief, but his mind was not at ease and it worried him to have to keep inactive.

During the next year there was very little change in Arthur's condition, but he often expressed a dread of Bright's disease, which had been prevalent in his family. His fears proved to be well-founded, for in February, 1886, when he was fifty-five years old, he had his first attack of acute nephritis with generalized edema of the body and considerable albumen in the urine. Dr. George A. Peters, who had been his personal physician for more than twenty years, then called Dr. Alfred L. Loomis in consultation. Their examination revealed not only an advanced nephritis, but also a greatly enlarged and weakened heart which might at any moment become unable to cope with the strain of combating the existing infections of his body. He was kept in bed for several months, but breathing became very difficult and he was unable to sleep. In June, 1886, a change of surroundings was recommended and he was taken to New London, Connecticut. This trip did not prove to be beneficial, however, and he returned to his New York City home where he remained until his death.

Despite his weakness and disease, Arthur did not lose any weight and his condition continued unchanged until late in the fall of that year. On Tuesday, November 16, 1886, he was unusually bright and buoyant. He was up and able to go about his room, and he ate his food with a zest that he had not shown for a long time. His mind took a retrospective turn and he talked with his two sisters of his childhood, when they all were young and happy together. He felt unusually well, and it looked as if he had many months at least in store for him. When his sisters bade him good-night before he went to sleep, he spoke cheerfully of the morrow.

But Arthur never again woke to full consciousness. During the night he was watched at intervals, and everything seemed to be well with him, his sleep as peaceful as a child's. Even in the early morning, when one of the servants passed through the rooms, he seemed to be sleeping normally. It was customary to rouse him at about eight o'clock every morning, and a few minutes before this hour on Wednesday, November 17, an attendant spoke to him. When Arthur did not answer, the attendant noticed that he seemed to be breathing with an effort, and, becoming alarmed, he summoned the household. The ex-President was in semi-stupor and could not be aroused.

Dr. George A. Peters was sent for at once. He hurried to the room where Arthur lay, felt the sick man's pulse, took his temperature, and shook his head. His experienced eye saw that Arthur was dying. His entire left side was paralyzed, indicating that there had been a cerebral hemorrhage. Dr. Peters could give no comfort to the anxious relatives, and he told them

that the end was close at hand, although it might not come for several days. Dr. Valentine, the partner of Dr. Peters, was also sent for and remained constantly with the sick man while Dr. Peters went home to get some rest.

By nightfall Arthur was still weaker. At midnight, Dr. Peters made his last call. The patient was then breathing heavily, but as the morning hours approached, the dying man's breath became shorter and the end drew near. As time went on, his breathing became so faint that it could scarcely be perceived. Towards five o'clock in the morning Dr. Valentine bent over the dying man, and his face wore an anxious look as he told the two sisters that the end had almost come. With hardly a tremor of the body, and only a slight gasp just before the end, Chester Alan Arthur passed away at 5:10 a.m. on November 18, 1886. He died at his home at 123 Lexington Avenue at the age of fifty-six years and one month.

Dr. Peters gave the following report to the newspapers:

"The course of General Arthur's death was the rupture of a small blood vessel in the brain, which occurred early Wednesday morning. It was not looked for and is as liable to come to a well person as well as a sick man. The General has suffered for about two years from an enlarged and feeble heart and from Bright's disease.

"His end was peaceful and a fitting close to his life. He was not able to talk after the attack, and I think from the expression on his face that he was glad that the end had come."

The primary cause of Arthur's death was a cerebral hemorrhage, with the contributing factors of chronic nephritis, or Bright's disease, chronic myocarditis, and a malarial infection that had not been completely thrown off.

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Grover Cleveland

1837-1908

GROVER Cleveland made several remarkable comebacks during his career, both in politics and in his physical health. He was the first Democrat to be elected President in twenty-eight years, and the first and only President to be elected to a second nonconsecutive term. Even more interesting from a medical standpoint is the fact that in middle life he was operated on for cancer of the jaw and made a complete recovery.

Cleveland's story begins in the town of Caldwell, in Essex County, New Jersey, where he was born on March 18, 1837, the youngest in a family of five children. His father, Richard F. Cleveland, a Presbyterian minister, was a descendant of Moses Cleveland who emigrated from England to Massachusetts in 1635. Young Stephen Grover, as he was christened, was a chubby youngster, large for his age and very fond of all the games and outdoor recreations of boys of his time. His sister, Susan, recalled him as "a little, round faced, blue-eyed boy" who was chuck-full of fun and inclined to play pranks, and a neighbor called him the roughest and toughest of Rev. Cleveland's children. He grew from a large, apple-cheeked boy who liked to swim, fish, trap, hunt, and skate, to a ruddy, full-blooded, close-knit and big-boned young man. He attained his full height at seventeen, but at that time was still slender.

Although his name was officially Stephen Grover Cleveland, when he was about nineteen years old he signed his name S. Grover Cleveland and shortly afterward dropped the Stephen altogether. As a young man, Cleveland had what might be called a dual personality. Most people considered him a hard-working young lawyer, impassive and dignified, but among the younger set he was known as a man about town who delighted in occasional gambling and cards, and who could frequently be found in the old German beer gardens or on a fishing party with plenty of liquid refreshments. Possibly as a result of this youthful reputation, Cleveland was involved in a scandal when he was thirty-seven years old. A woman named Maria Halpin gave birth to an illegitimate son and claimed that Cleveland was the father. This claim was never substantiated, but in an effort to avoid trouble and injustice, Cleveland sent funds to provide care for the boy after the mother began drinking and neglecting him. The Republicans publicized this incident widely during Cleveland's first presidential campaign.

Cleveland's career as a lawyer led to his being elected mayor of Buffalo in 1881, governor of New York in 1882, and President of the United States in 1884. At the beginning of his term he was forty-seven years old, a big

man with a husky clumsy figure, weighing about 250 pounds and about 5 feet 11 inches tall. His two or three fat chins receded from a strong jaw, and his large and rather hard mouth was masked by a heavy brown walrus mustache. He had brilliant blue-gray eyes and rather thin brown hair. His voice was clear, powerful, and resonant, and he had a tendency to use gestures when speaking in public. Next to Taft, he was the largest and most corpulent of our Presidents. During his first incumbency in the White House, Cleveland worked very hard and put in longer hours than almost any other previous President. He smoked cigars constantly, inhaling deeply, and was not ashamed to take a few drinks on occasion. His favorite hobby was fishing, which took him on many trips into the Adirondacks, to Saranac Lake, Cape Cod, and Florida, as well as to all the local and near-by streams.

On June 2, 1886, during his first term as President, Cleveland was married to Frances Folsom, the daughter of his former law partner. He was forty-nine years old and his bride twenty-two. Their first daughter, Ruth, was born in 1891, and a second daughter arrived on September 1, 1893, the first child of a President ever born in the White House. They also had three other children.

Cleveland's health was uniformly good until middle age. While he was governor of New York, he was attacked by a half-crazed maniac whose brother Cleveland had refused to pardon for a crime, but the man was subdued before any harm was done. Cleveland's first real illness, except for his cancer, came in August, 1895, when he suffered an acute attack of gout. This ailment was first noticed by the public at General Grant's funeral, where Cleveland limped quite perceptibly. His foot bothered him at intervals throughout the rest of his life, and was again the focus of general attention when, at President McKinley's inauguration, he walked very slowly and with a decided limp, his right foot heavily bandaged and covered by a large felt boot.

The most important event in Cleveland's medical history was the development of a malignant growth in his upper jaw. It was on May 5, 1893, shortly after the beginning of his second term as President, that he first noticed a rough spot in the roof of his mouth. It became increasingly more uncomfortable, and on June 18 it was examined by Dr. O'Reilly, the White House physician. This examination revealed a tumor mass the size of a quarter, extending from the molar teeth on the left side to within one-third of an inch of the hard palate midline, and having some soft diseased bone beneath it. Dr. O'Reilly immediately called Dr. Bryant, Cleveland's personal physician, into consultation. They performed a biopsy, a removal of a piece of tissue for diagnostic purposes, and this tissue was sent to Dr. William Welch of Johns Hopkins Medical School. Examination under the microscope confirmed the diagnosis of malignancy, and an immediate operation was advised. Because of the financial crisis occurring at that time, it was decided that the operation should be performed secretly to prevent further panic in the country.

Dr. Bryant was delegated to inform the President about his condition. When Cleveland inquired, "What do you think it is, doctor?" Dr. Bryant

replied, "Were it in my mouth, I would have it removed at once." Dr. W. W. Keen, a prominent surgeon of Philadelphia, was then called in consultation by Dr. Bryant, and on finding no perceptibly enlarged glands and deeming the growth unquestionably malignant, he too advised immediate surgery.

The operation was performed July 1, 1893, on Commodore Benedict's yacht, the *Oneida*. The President sat in a chair of the salon of the yacht and rested against the mast, which passed through the cabin. The first step of the operation was performed under nitrous oxide anesthesia, with Dr. Hasbrouck extracting the two left upper bicuspid teeth. Dr. Bryant then made the necessary incisions in the roof of the mouth. The rest of the operation is very well described by Dr. Keen:

At one-fourteen p.m. ether was given by Doctor O'Reilly. During the entire operation Doctor Janeway kept close watch upon the patient's pulse and general condition. Doctor Bryant performed the operation, assisted by myself and Doctor Erdmann. The entire left upper jaw was removed from the first biscupid tooth to just beyond the last molar, and nearly up to the middle line. The floor of the orbit—the cavity in the skull containing the eyeball—was not removed, as it had not yet been attacked. This extensive operation was decided upon because we found that the antrum was partly filled by a gelatinous mass, evidently a sarcoma. This diagnosis was later confirmed by Dr. William H. Welch, of the Johns Hopkins Hospital, who had also examined the former specimens.

The entire operation was done within the mouth, without any external incision, by means of a cheek retractor, the most useful instrument I have ever seen for such an operation. This retractor I had brought back with me from Paris in 1866. The retention of the floor of the orbit prevented any displacement of the eyeball. This normal appearance of the eye, the normal voice, and especially the absence of any external scar, which was the most important evidence of all, greatly aided in keeping the operation an entire secret. (This cheek-retractor I have deposited with the College of Physicians of Philadelphia together with the portion of tissues removed and photograph of the casts of the mouth on which Dr. Gibson molded the artificial jaw which he kindly presented to the College.)

Only one blood vessel was tied. Pressure, hot water, and at one point the galvanocautery, checked the bleeding. The hemorrhage was not large, probably about six ounces in all. At the close of the operation, at one-fifty-five p.m., the pulse was only eighty. A large cavity was packed with gauze to arrest the subsequent moderate oozing of blood. At two-fifty-five p.m. a hypodermic of one-sixth of a grain of morphine was given—the only narcotic administered at any time.

After the operation Dr. Keen commented on the fact that Cleveland was a remarkably docile and courageous patient. Dr. Bryant evinced a somewhat different opinion, however, when he stated that a few days postoperative, Cleveland was grunting and suffering from an excess of medicine rather than a lack of it, since he believed that if a teaspoonful dose was going to help, the whole bottle would be that much better. It was also rumored that on one occasion, when no one was around, Cleveland ate a whole peach, an article of food which was certainly on the forbidden list. In answer to these charges, Cleveland said, "I am not so dreadfully heedless of the care I owe myself (for others' sake) as is suspected of me; and touching the Doctor's (Bryant) accusation of indiscretion, is it not in the very nature of faithful, devoted, and anxious medical ministrations to find patients in-

discreet?" He was allowed no visitors for about two weeks, and when outsiders were finally allowed to see him he seemed to have changed a great deal in appearance and lost quite a bit of weight. His mouth was still so stuffed with antiseptic wads that he could hardly articulate.

The recuperative powers of the President were truly remarkable. On the second postoperative day he was up and about, and only a few days later Dr. Kassen C. Gibson, of New York, fitted Cleveland with an artificial jaw of vulcanized rubber. This supported the cheek in its natural position and prevented it from falling in. When it was in place, the President's speech was excellent and even its quality was not altered. On October 14, Cleveland, in a letter to Dr. Gibson, expressed his lively satisfaction after trying a new and even better and more comfortable plate, also made by Gibson.

At the immediate time of such a radical operation, it was quite impossible to judge accurately whether all the diseased tissue had been removed, for all the cut surfaces were more or less covered with blood. Later, when Dr. Bryant could see clearly the condition of Cleveland's mouth, he was not quite satisfied with its appearance at one point. Consequently on July 17, he removed all tissue that still looked suspicious and cauterized the entire surface with the galvanocautery. This second operation was brief, and the President recovered quickly. The passage of time proved how successful the treatment had been, and frequent examinations over the years and up to the time of Cleveland's death failed to disclose any recurrence of the cancerous growth.

On January 20, 1906, when Dr. Bryant, his friend and physician, was president of the New York State Medical Society, Cleveland, in the role of advocate for all sick people, pleaded with the doctors to give their patients more of their confidence. "If we recover," he said, "it is only to take our place on the waiting list still subject to their advice. If we do not recover, it is left to us to do the dying. We do not claim that we should be called into consultation in all our illness, but we would be glad to have a little more explanation of the things done to us." This sounds like a good logic, and it is a plea that doctors should heed today as much as in Cleveland's time.

At the end of his second presidential term, Cleveland retired with his family to Princeton, New Jersey, where he spent the remaining eleven years of his life. His peace was not unbroken, however, for on January 2, 1904, his eldest daughter, Ruth, developed acute tonsillitis. Four days later, the disease was diagnosed as diphtheria, and she died on January 7, 1904. Cleveland's own physical condition left much to be desired. His sixty-ninth birthday found him in Florida, seeking the health which never would return. Although he was not unusually old, he was aging fast. The physical strength which had made possible strenuous days and deliberately sleepless nights was now gone, and he no longer dared to brave the penetrating dampness of a New Jersey March. At this time he became very gaunt, his paunch slumped, and veins stood out on his scrawny neck. His face became wrinkled and dry, and his eyelids were red and scaly from a

blepharitis marginalis. The muscles of his face and jaw also sagged perceptibly.

From 1899 until his death in 1908, Cleveland's health became increasingly worse. Severe attacks of rheumatism kept him bedridden for weeks at a time, one spell lasting almost three months. During this time he also had a good deal of trouble with his digestive tract, and he often used a stomach pump on himself. The stomach symptoms were probably signs either of gall-bladder disease or duodenal ulcers. Despite his failing health, however, the last few years of his life were tranquil and serene, much different from the turbulence of his mental state immediately after leaving the White House.

In March, 1908, Cleveland grew definitely weaker. His gastrointestinal trouble was now complicated by a failing heart, with myocardial degeneration, and by kidney trouble in the form of a chronic nephritis. In April he had a particularly severe attack of pain in his chest, followed by great prostration. After this, one attack followed another with greater frequency. On the evening of June 23, he became stuporous, and he died at 8:40 a.m. on June 24, 1908.

There are few details obtainable regarding Cleveland's last hours, but the contemporary newspaper accounts revealed that at some time before midnight on June 23 the former President's condition became so alarming that three physicians worked over him most of the night. He sank into unconsciousness towards dawn and remained in a comatose condition until he died. The following medical statement was signed by Dr. Joseph D. Bryant and Dr. George Lockwood of New York, and by Dr. M. J. Carnochan, the local physician:

"Mr. Cleveland for many years has suffered from repeated attacks of gastrointestinal origin. Also he had long standing organic disease of the heart and the kidneys. Heart failure complicated with pulmonary thrombosis and edema were the immediate causes of his death."

A supplementary statement was given out at one o'clock on the day of Cleveland's death:

"In addition to the previous statement Dr. Bryant says that up to twenty-four hours of death the ex-President was in the same condition in which he had been for the last few days, a sick man, but there was no real cause for alarm until twenty-four hours ago, when he had a severe attack of heart failure. Since that time the ex-President grew weaker with intermittent spells of consciousness, and death was due to a sudden attack of heart failure."

Cleveland had not appeared in public since his severe heart and kidney attack at Lakewood, on the southern shore of New Jersey, which preceded his seventy-first birthday by only a few weeks, but some of those who had seen him since then expressed no surprise at his death. The traces of illness were all too visible in his appearance. This was especially true of his size and weight, and it is probable that at the time of his death he did not weigh more than 125 pounds.

Cleveland's last few attacks of pain were almost certainly the result of coronary sclerosis, with thrombi forming infarcts in the heart muscle, although it is possible that they were the terminal episodes of his gastrointestinal disturbance. Whatever the precise nature of Cleveland's final attack, however, the outstanding fact remains that Cleveland lived for fifteen years with absolutely no recurrence of his sarcoma (a type of cancer). Sarcoma of the left maxillary bone with involvement of the left antrum was undoubtedly the proper diagnosis, for carcinoma of the antrum would be found as a tumor *in* the antrum, with its usual extension into the nose, and this was not the case with Cleveland. Cleveland's complete recovery speaks well for the thoroughness of his doctor's surgery, and is also a recommendation for the spirit with which he received the opinion of his physicians and acted immediately on their advice. His victory over cancer is a contrast to the case of President Grant, whose life might have been saved had he taken prompter action once the diagnosis of malignancy was made.

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Benjamin Harrison

1833-1901

BENJAMIN Harrison was born on August 20, 1833, in North Bend, Ohio, near Cincinnati, in the house which was originally the farm estate of his grandfather, William Henry Harrison. He was the second son of John Scott Harrison. He spent his entire boyhood on this ancestral farm and attended a log cabin school just a short distance away. Like most young boys, he spent much time in fishing, hunting, sliding, and playing ball. Though of slight physique, slender, and rather short for his age, he more than made up for these deficiencies by an abundance of spirit and determination. On entering Miami University, he was still a slight-framed, rather undersized youth who was serious-minded for his years but nevertheless took part in all outdoor sports and activities.

There is no record that Harrison suffered from any diseases during his childhood and young manhood. The first anecdote of medical interest concerns his actions after the bloody battle of New Hope Church on May 25, 1864. When firing had ceased in the evening, Harrison, who was a general in the Union army, found that a great many of his men were dead or wounded. His call for regimental surgeons went unheeded, so he arranged to have the wounded carried to the rear to a small frame house which was transformed into a temporary field hospital. Rolling up his sleeves and cleaning his hands, Harrison turned surgeon himself, bandaging wounds, applying tourniquets, and giving as much first aid as he was able. When the regimental doctors arrived later in the evening they found him covered with blood, working by candlelight, and looking more like a butcher than a Samaritan. His soldiers never forgot the tenderness and sympathy he showed them, both by his actions and by his kind encouraging words.

During January of the following year, 1865, Harrison was ordered to join General Sherman at Savannah. While en route to New York, he suddenly became very seriously ill and was removed from the train at Narrowsburg, New York. This sickness was the prodrome of a severe attack of scarlet fever which lasted for about three weeks. Against the advice of his physicians, he took a steamer for Savannah, but got there too late to join Sherman. He was then put in command of a camp for convalescents at Blair's Landing, South Carolina, until he was fully recovered. He suffered no apparent after-effects from this disease in later life.

In the prime of life, Harrison was only 5 feet 6 inches in height—probably the shortest President except Madison and possibly John Adams. His skin was very white, with a pink tinge to his face, and his eyes were blue and

rather piercing, although they often wore a twinkle. A soft, high, clear voice which was peculiarly resonant gave Harrison a commanding platform presence despite his lack of stature. His torso was very large, and his legs and neck appeared to be too short in comparison. These oddities, together with his heavy beard, set him apart from other men in appearance. He was described as being rather unsociable but unusually astute in politics and logical in reasoning. His main distinguishing trait of character was his thoroughness. His reserved manner caused him to be called cold and unsympathetic, but no one gathered around him more devoted and loyal friends, and his dignified bearing in and out of office commanded the hearty respect of his countrymen.

During his presidential term, from 1889 to 1893, Harrison's health was good, better in fact than it had been when he was inaugurated. On coming to the White House, his face was sallow and deep-lined, his eyes dull and listless, and his appearance careworn in the extreme, showing very plainly the effect of the fatigues and anxieties of his political campaign. By the end of his term, however, the lines of his face were smoothed out, his complexion was clear and fresh, his eyes bright and expressive, and from head to foot he gave the impression of a man in vigorous health of body and mind. This is a very curious reaction when one considers the deteriorating effect the presidency has had on other men. To a great extent, the change in Harrison was due to the fact that he was a cool, tireless worker who never became excited nor worried unduly over things that mattered little. His regular long walks, along with his indoor exercises, undoubtedly helped to maintain his health and even temper.

Although Harrison was very short, he was broad-shouldered and extremely strong. His physical prowess was demonstrated in an incident which occurred at the White House during his presidency. A young man, crazed with drink and fighting mad, broke into the White House and threatened Harrison's life. Two doorkeepers grappled with the would-be assassin, who succeeded in inflicting a painful and stunning blow on the head of one of his captors. Harrison, hearing the crashing of glass, hurried to the aid of his doorkeepers and quickly subdued the man by pinning his arms to his sides so tightly that he was unable to move. He asked one of the aides to cut a piece of window cord, and then he tied up the intruder hand and foot. Throughout the whole affair the President was the coolest one present, and his imperturbability as well as his enormous strength stood him in good stead.

During Harrison's stay, the White House was crowded with friends and relatives, and the atmosphere was always home-like. At one time there was a good deal of newspaper publicity concerning Harrison's supposed intimacy with his grandson, "Baby McKee," but this was merely cruel and vicious slander without the slightest foundation in truth.

When Harrison left the presidency at the age of fifty-nine, his health continued good for many years, until the early spring of 1901. On March 6, he contracted a head cold which kept him pretty much to his room

but not confined to bed. After breakfast on the morning of March 9, however, he had a severe chill, accompanied by aching throughout his body, and later in the same day his family physician, Dr. Jameson, diagnosed his condition as influenza. He was put to bed, and analgesics (to relieve pain) and inhalations were prescribed.

Two days later he developed pain on the left side of his chest, and an examination revealed a severely congested left lung and greatly increased respirations and rapid pulse. The doctor announced to the family that the patient had pneumonia. Harrison was given general supportive treatment, and oxygen was administered at frequent intervals. Nevertheless, his condition became steadily more critical, and he remained unconscious during his last twenty-four hours. On March 13, 1901, at the age of sixty-seven, he finally succumbed to an influenzal pneumonia, the same disease from which the first President Harrison had died.

Harrison's oxygen treatment, according to the newspapers, was the same kind as that given to Rudyard Kipling two years previously when he had pneumonia. Kipling, however, made a complete recovery. Throughout Harrison's illness, a source of annoyance to both the attending physicians and the family was the large number of offers and solicitations received from all sorts of quacks and cranks who guaranteed that they had found a remedy or system of treatment which would surely cure the ex-President. Each claimed his remedy to be infallible, and one of them went so far as to wire that he was en route to Indianapolis at his own expense to administer his treatment. Such self-styled medicine men could not have saved Harrison, but in his case neither could reputable physicians. Harrison's constitution, hitherto so healthy, had aged and lost its power to combat infection, and without the modern drugs that have so effectively reduced pneumonia's threat, there was nothing more that medical science could do.

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William McKinley

1843-1901

WILLIAM McKinley was born at Niles, Ohio, January 29, 1843, the seventh of nine children. When he was eight years old, the family moved to Poland, Ohio, where educational facilities were much better than at Niles. He was known to his playmates as a quiet, rather serious, young lad who nevertheless was marble champion and an expert with the bow and arrow, his favorite hunting weapon. He didn't care much for fishing, but was very fond of swimming.

When McKinley was seventeen, he entered the junior class of Allegheny College at Meadville, Pennsylvania, but was soon forced to go home because of illness. He was underweight, anemic, and tired, and had a "general physical breakdown," as the condition was then called. Shortly after this, however, in June, 1861, when he was not yet eighteen, he enlisted in Company E, Twenty-third Ohio Volunteers. He served with great courage, and received a citation for bravery from President Lincoln. Although he himself was not wounded, his horse was shot from under him at the battle of Berryville.

In 1871, when McKinley was twenty-eight years old, he married Ida Saxton. They had two daughters, one of whom died when an infant and the other when four years old. Following the birth of her second child, Mrs. McKinley's limbs became paralyzed and she remained an invalid the rest of her life.

In adult life, McKinley had a fine personal appearance. He was only 5 feet 7 inches tall but quite stocky in build, at one time weighing almost 200 pounds. He had a barrel-like chest, broad shoulders, and a finely moulded head. He was smooth shaven, with fine lines about his eyes and mouth, and his jaw was square and cleft. He had a prominent nose, dark blue eyes, and hair that receded somewhat at the temples and forehead and became sprinkled with gray before his death. His personality was one that endeared him to all his associates and friends. He was generous, sincere, affectionate, and very trustful of his friends. He was always even-tempered and never used profanity. Although he smoked strong cigars almost constantly, he never allowed his picture to be taken with a cigar in his mouth or hand, and he never drank alcoholic beverages or gambled.

Except for mild disturbances of his heart, characterized by a fast pulse and some myocardial degeneration—his physicians called it "tobacco heart"—McKinley was very healthy throughout his adult life. He became Presi-

dent in 1897 at the age of fifty-four, was re-elected in 1900, and had just begun his second term when he met his violent tragic death.

At the very peak of his career, the President was a guest of the Pan-American Exposition directors at Buffalo, New York. On September 6, 1901, he gave a reception at the Temple of Music, meeting great crowds of his countrymen who lined up to shake his hand. In the line was a young anarchist, Leon Czolgosz, who kept his right hand wrapped in a handkerchief. As he approached the President, Czolgosz suddenly fired two shots from a concealed revolver.

The first bullet entered too high for the assassin's purpose, and as it struck, McKinley lifted himself on his toes with a gasp. This movement, together with a slight turn of his body, caused the second bullet to enter his abdomen some inches above the umbilicus (navel). McKinley doubled over and sank back into the arms of Secret Service Detective Geary. Within a few minutes an ambulance hurried the patient to the emergency hospital on the Exposition grounds, while Czolgosz was apprehended and his gun examined. It proved to be a five-barreled double-action revolver of .32 caliber, every chamber of which had been loaded.

Six doctors were at McKinley's side within thirty seconds after his arrival at the hospital, among them his family physician, Dr. P. M. Rixey. Dr. Roswell Park, a surgeon of national reputation, was summoned from Niagara Falls, where he was performing an operation, and Dr. Herman Mynter soon arrived. The physicians consulted together but hesitated to perform an operation. McKinley reassured them by expressing his confidence in their ability, but no decision had been reached when Dr. Mann of the Exposition hospital staff arrived. After another consultation, Dr. Mann informed the President that an operation was necessary. "All right," replied McKinley. "Go ahead. Do whatever is proper."

The operation was performed by Dr. Mann, with Dr. Herman Mynter as his first assistant and Dr. John Parmenter as second assistant. A Dr. Lee of St. Louis, who happened to be on the Exposition grounds at the time of the tragedy, had placed his services at the disposal of the President and also assisted at the operation. Dr. Nelson W. Wilson watched the time and took detailed notes, while Dr. Eugene Wasdin of the Marine Hospital gave the anesthetic. Dr. Rixey came in during the latter part of the operation and held the light, but Dr. Park, who had been sent for from Niagara Falls, did not arrive until it was nearly over.

The anesthetic administered was drop ether, and the President remained under its influence for two and a half hours. The only surgical instruments available were those contained in a small pocket case carried by a local doctor. The only illumination was ordinary daylight, augmented by reflecting the rays of the setting sun into the wound with a hand mirror. The wound in the chest proved to be only a flesh wound, since the bullet had struck a button and had been somewhat deflected. It entered the middle of the chest above the sternum, but did not penetrate far. When McKinley was undressed for the operation the bullet fell from his clothing

onto the table. The second and serious wound was a bullet hole in the abdomen, about five inches below the left nipple and an inch and a half to the left of the median line. The bullet had penetrated both the anterior and posterior walls of the stomach, going completely through that organ, and it was this circumstance that made the injury so dangerous (Fig. 6).

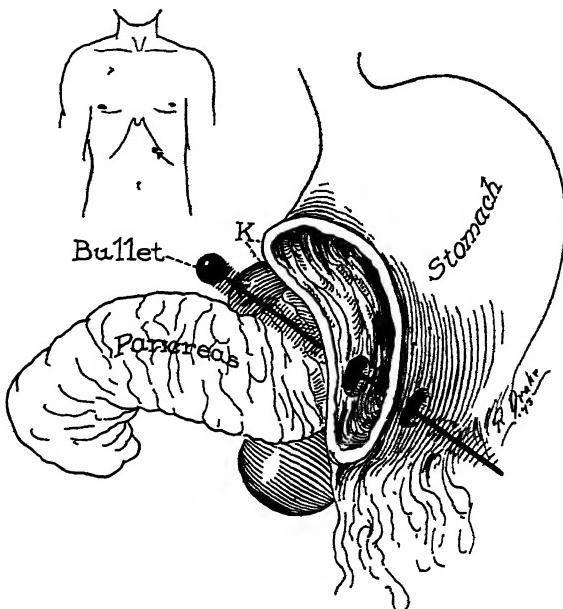


Fig. 6. The site of the stomach wound which ultimately caused the death of McKinley. Drawing by Russel Drake in "Gunshot Wounds of Three Presidents of the United States," by S. B. Harper.

The *operation lasted almost an hour*. An incision above five inches long was made. It was found necessary to turn up the stomach in order to trace the course of the bullet. The bullet's opening in the front wall of the stomach was small and clean-cut, and it was carefully closed with sutures. A search was then made for the hole in the back wall of the stomach. This hole, where the bullet left the stomach, was larger than the first, over an inch in diameter, with jagged and ragged edges. This wound was larger than the entering wound because the bullet in its course forced tissues through ahead of it. The wound was sewed up in three layers.

In turning up the stomach, a procedure that was absolutely necessary and performed by Dr. Mann with rare skill, there was a danger that some of the contents of the stomach might go into the abdominal cavity and, as a result, cause peritonitis. Luckily, however, there was little in the President's stomach at the time of the shooting, and subsequent developments tended to prove that this feature of the operation was successful and that very little of the contents of the stomach was allowed to escape. After both holes had been closed by sutures, the abdominal cavity was washed with a

salt solution and the external wound sewed tightly, without provision for drainage.

During the operation, the President's pulse remained at about one hundred and thirty, and was still at that figure when the operation was concluded. His respiration was normal throughout, and at no time was his breathing labored or difficult. He gave no indication of having suffered from shock either immediately after the shooting or after the subsequent surgery. The operation was a complete success in the opinion of the physicians present, and they saw no need for further surgery. The danger now was from possible complications, especially peritonitis.

Arrangements were made to remove McKinley to the Buffalo home of John G. Milburn before any reaction might set in. Dr. and Mrs. Rixey, Mrs. Cortelyou, and Webb C. Hayes, a son of the late President Hayes, drove ahead to make preparations to receive him, and two nurses from the hospital also took an automobile loaded with supplies down to the Milburn house. At about seven-thirty in the evening the ambulance backed up to the hospital door, and four surgeons carried out the stretcher on which the President lay. His head rested on a pillow, and a white sheet concealed all but his face, which looked as white as the linen around it. He was taken to a large bedroom on the second floor of the house where everything had been quietly arranged for him before his arrival from the hospital. Every medical appliance was within easy reach, the professional nurses were in waiting, and quarters were arranged for the doctors.

McKinley passed the first night after the shooting fairly comfortably. However, his temperature increased from 100° to 100.6° between 1:00 and 3:00 a.m., and fears were entertained that peritonitis might set in. The doctors chosen to care for the case, P. M. Rixey, M. B. Mann, Roswell Park, H. Mynter, and Eugene Wasdin, were in attendance at the President's bedside all night, watching each symptom carefully. At 10:40 p.m. the doctors issued this bulletin: "The President is rallying satisfactorily and is resting comfortably. Temperature, 100.4°; pulse, 124; respiration, 24." At 1:30 a.m. the bulletin read: "The President is free from pain and resting well. Temperature, 100.2°; pulse, 120; respiration, 24." At 3:15 a.m. the bulletin read: "The President continues to rest well. Temperature, 101.6°; pulse, 110; respiration, 24."

Saturday, the day following the shooting, was one of grave anxiety. Although McKinley was holding his own, his doctors felt that a crisis was approaching. It was thought that Sunday would decide whether the shots fired by Czolgosz would be fatal. Dr. Rixey stated his opinion that the President would recover, but the other physicians refused to commit themselves, saying that they could not make promises until further developments. An x-ray apparatus was brought from Thomas A. Edison's laboratory with the intention of trying to locate the bullet which was lodged in McKinley's back, but it was not used. On Sunday morning at five o'clock the physicians issued this bulletin: "The President has passed a fairly good night. Pulse, 122; temperature, 102.4°; respiration, 24."

Sunday proved a rather uneventful day, and the anticipated crisis did not materialize. The news was good throughout the day. The President's temperature on Sunday evening was a degree lower than it was during the morning, the pulse was slower, and the respiration easier. Dr. Charles McBurney of New York, one of the most noted surgeons in the world, arrived during the day and held a consultation with the other doctors at three o'clock Sunday afternoon. Immediately following the consultation this bulletin was issued: "The President, since the last bulletin (3:00 p.m.) has slept quietly, four hours altogether, since nine o'clock. His condition is satisfactory to all the physicians present. Pulse, 128; temperature, 101°; respiration, 28."

McKinley improved so rapidly on Monday that his friends declared he would be able to attend to the duties of his office within a month. The worst danger was regarded as past, peritonitis seemed no longer probable, and the only cause for fear was the possibility of a sinking spell. All day Monday the bulletins were hopeful. One said the President had passed a somewhat restless night but had slept fairly well. Another issued at 3:00 p.m. stated: "The President's condition steadily improves and he is comfortable, without pain or unfavorable symptoms. Bowel and kidney functions normally performed."

News from the bedside on Tuesday was more favorable still. Everyone was very hopeful, and fast recovery was the general prediction. Aside from careful watching, the doctors had only two services to perform. One was to give McKinley food for the first time since the shooting, and the other was to open in part his outside wound to remove some foreign substances. It developed that a portion of the President's clothing had been carried into the wound by the bullet, and this had not been completely removed at the first operation. Since a slight irritation was caused by the cloth, the surgeons removed it. The operation caused no harm and little annoyance to the patient. A stitch abscess also developed in the wound, and in consequence, healing was delayed by a separation of the wound edges.

Wednesday was another day full of hopeful signs. The President continued to show remarkable recuperative powers and passed the day without the slightest unfavorable symptom. He was able to retain food on his stomach, and surprised and amused his doctors by asking for a cigar. He was not allowed to smoke, but he was placed in a new bed and given a bath. His highest temperature on Wednesday was 100.4° at ten o'clock in the evening. The highest point reached by his pulse was 120—at 6:00 a.m.—and his respiration remained normal at 26.

It was on Thursday, just six days after the shooting, that McKinley suffered a relapse. Everybody was still full of hope until 8:30 in the evening, when the physicians announced officially that the President's condition was not so good. The problem of disposing of the food in the stomach was becoming a serious one, and the danger of heart failure increased. At midnight the situation was critical. Calomel and oil were given to flush the bowels and digitalis to slow the heart. The bowels moved soon afterwards

and the patient improved. His pulse dropped again to 120, and the prospect was regarded as brighter.

Shortly after two o'clock Friday morning, the physicians and nurses detected a weakening of the heart action. The pulse fluttered and weakened, and the President sank toward a collapse. The end appeared at hand. Restoratives were speedily applied, but they did not at once prove effective. It was then decided to send for the other physicians, relatives, members of the Cabinet, and close personal friends of the President. The full corps of doctors was soon on the scene, and all set to work as they never worked before. About 6:00 a.m. the President rallied and seemed to have a fighting chance, but half an hour later he was thought to be dying. At seven o'clock it was announced by Abner McKinley, the President's brother, that he was sleeping quietly, watched closely by his physicians.

At about 9:00 a.m. the following bulletin was issued: "The President's condition has improved somewhat during the last few hours. There is a better response to stimulation. He is conscious and free from pain. Pulse, 128; temperature, 99.8°." At 12:30: "The President's physicians report that his condition is practically unchanged since the nine o'clock bulletin. He is sleeping quietly." At 2:30 in the afternoon another bulletin was given to the public: "The President has more than held his own, and his condition justifies the expectation of further improvement. He is better than yesterday at this time. Pulse, 123; temperature, 99.4°." At 4:00 p.m. there was little change except for a very slight general improvement.

The next bulletin at 5:48 p.m. revealed a definite decline. "The President is suffering from extreme prostration. *Oxygen is being given.* He responds to stimulation but poorly. Pulse, 125; respiration, 40." At 6:15 another bulletin read: "In spite of vigorous stimulation the President's depression continues and is profound. Unless it be relieved the end is but a question of time."

About 2:00 a.m. on Saturday Dr. Rixey noted the unmistakable signs of dissolution, and the immediate members of the family were summoned to the bedside. Mrs. McKinley was asleep, however, and it was considered desirable not to awaken her for the last moments of anguish. While the other physicians waited in an adjoining room, President McKinley, aged fifty-eight, breathed his last at 2:15 Saturday morning, September 14, 1901.

An autopsy was performed, the report of which follows, signed by the impressive battery of McKinley's doctors:

The bullet which struck over the sternum (breast bone) did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near the lower border. Both holes were found closed by the stitches, but the tissue around each hole was gangrenous. After passing through the stomach, the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the left kidney. This portion of the bullet track was also gangrenous, the gangrene involving the pancreas. The bullet was not found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of nature, and death resulted from the gangrene which

affected the stomach around the bullet wounds as well as the tissue around the further course of the bullet.

Death was unavoidable by any surgical or medical treatment and was the direct result of the bullet wound.

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The discovery of gangrene in the abdominal organs came as a surprise to McKinley's doctors. Moreover, the gangrenous area was unusually large, reaching a circumference about the size of a silver dollar about the internal wound. Dr. Wasdin strongly supported the view that the murderous bullet had been poisoned with curare or smeared with virulent bacteria, and that this was the chief cause of the development of gangrene. He was alone in this opinion, however, and there was no evidence to substantiate it. The most plausible explanation seems to be that the bullet severed many abdominal blood vessels, and the consequent lack of an adequate supply of nourishment to the pancreas, left kidney, stomach, and mesentery produced the fatal gangrene in these organs.

At any rate, it seems quite certain that McKinley's death did not result from peritonitis or septicemia, for his normal or subnormal temperature and very slight fevers, together with the absence of any other signs of acute inflammation, indicate that these infections never developed. The other findings of the autopsy, however, help to explain McKinley's failure to recover. The heart wall, as shown by both macroscopic and microscopic examinations, had undergone atrophy and diffuse fatty degeneration, which produced McKinley's rapid pulse throughout his entire illness. The toxic products from the devitalized and degenerated tissues and the impairment of the heart muscles were the important factors in determining the fatal outcome.

Another possible contributing cause of death might be deduced from the clinical findings during McKinley's last thirty-six hours. These records suggest that he may have had a pulmonary embolus, even though the lungs were pronounced normal at the autopsy. During these last hours, McKinley also became very dehydrated, maintaining only a small fluid intake and producing urine of a high specific gravity, and this condition had certainly not been helped by the purges and enemas previously given. It is conceivable that blood transfusions and intravenous injections of salt or dextrose solutions might have swung the balance toward recovery.

After the first World War, certain general conclusions were reached concerning wounds of the stomach, and it is interesting to consider these in relation to McKinley's case. Gastric wounds are probably less serious than others of the gastrointestinal tract. The mortality from all wounds of the

stomach ranged between 55 and 60 per cent and varied between 25 and 50 per cent in uncomplicated gastric wounds. Death within the first few hours to few days is due to hemorrhage and shock and subsequently to peritonitis.

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Theodore Roosevelt

1858-1919

THEODORE Roosevelt, as Vice President, rose to the country's highest office on the death of President McKinley, and almost immediately he took his place as the most colorful personality and forceful political figure of his time. The story of his physical transformation from a frail unhealthy child to a sturdy specimen of rugged manhood is equally impressive.

Born in New York City on October 27, 1858, Theodore, Jr., was the second of four children of Theodore and Martha Bulloch Roosevelt. Almost from birth, little "Teddie" was a weak and sickly child. He was scarcely more than a baby when he developed a severe attack of bronchial asthma, and this malady recurred at frequent intervals throughout his boyhood, causing considerable suffering and discomfort. At one time it was so bad that his parents took him up into the mountains for relief. A diary kept during his childhood recounts how many nights he was able to sleep only when in the arms of his father, and tells how he was urged on several occasions to smoke a cigar—evidently a medicinal cubeb—to ease his breathing. His inability to breathe while lying down, together with a croupy cough, gave him many sleepless nights. In common with his sisters and brother, he had measles, chicken pox and mumps, but no mention is made of infected tonsils or adenoids. Thus, he is seen first as a pale thin boy, small for his age, with toothpick legs, sunken chest, knobby knees, and scant sandy hair. On top of all this he was afflicted with protruding teeth and a defect in his speech.

Because young Teddy did not attend public school, the fact that he was near-sighted was not discovered until he was thirteen years old. At that time glasses were prescribed for him. His visual defect was evidently a progressive myopia, for as he grew older the strength of his lenses had to be steadily increased. He wore his glasses constantly up to the time of his death. When he went to Cuba to fight in the Spanish-American War, he took along twelve extra pairs of spectacles, knowing that he would be helpless should he break his glasses in battle.

In 1880, Roosevelt married Alice Lee, but they had only four years together before young Mrs. Roosevelt died on February 14, 1884, two days after the birth of their daughter, Alice. By a tragic coincidence, Roosevelt's mother died within twelve hours of his wife, and the young man was left in a state of utter despondency. Driven both by sorrow and by his precarious health, Roosevelt went west and bought the Elkhorn Ranch in North Dakota. His physicians had warned him that it was very possible

that he had a beginning tuberculosis of the lungs, and, like Grant, he was advised to lead an outdoor life for at least a year. The wild life on the ranch helped him to forget his grief, and soon "Four eyes," as he was nicknamed, once a city dude, became as good a broncobuster as the best of them. During this training period he had two accidents. First he broke his arm when he was thrown by a bucking horse, and only a few months later he cracked his scapula, or shoulder bone, when a horse rolled over backward and fell on top of him. Nevertheless, this year of ranching did him immense good, both psychologically and physically, and resulted in a complete recovery from his incipient tuberculosis.

Before long, however, the world beyond his own personal affairs called him, and he returned east to plunge into a political career. In 1886 he was married again, this time to Edith Kermit Carow, who bore him five children. His health remained good, and his newly-won physical vigor helped him to sustain the pace of his rapid rise to national prominence. In 1900, while making a speech in Victor, Colorado, during his campaign for the vice presidency, he was struck on the chest by a big piece of timber. Though he was painfully bruised, the injury caused no fracture of the ribs or sternum. Incidents like these seemed to make Roosevelt more determined than ever to bring his views to the public, and he became a real fighter for the principles he believed in.

When McKinley died, Roosevelt at forty-two became the youngest President the country had ever had. During his two terms in the White House, one of his favorite recreations was boxing. On one occasion, during a friendly match with a young naval officer, a relative of his wife, a glancing blow struck Roosevelt's left eye. No attention was paid to the incident until a few days later when he complained of seeing floating objects and a sort of veil in front of his eye. An ophthalmoscopic examination by a prominent Washington oculist revealed several fairly large retinal hemorrhages, caused by the bursting of arteries in the retina from the blow he received while boxing. His vision in this eye remained blurred, and four years later the eye was almost totally blind as a result of retinal detachment. This condition is a rather common one among boxers, but needless to say, Roosevelt never boxed again after this accident. In later life, his left eye diverged slightly because of its loss of vision.

Again on October 22, 1904, when Roosevelt was about forty-six, he sustained a severe injury when he was thrown from a horse. He landed squarely on his head and face, the latter of which was literally covered with cuts and abrasions and soon became so swollen that he was unrecognizable. The force of his fall also injured his neck and shoulders, and for a day or two it was feared that his spine was fractured. He remained in a state of shock for many hours, but his complete recovery after several weeks of convalescence removed any apprehension that he had suffered a skull fracture or brain injury. This tough Rough Rider had certainly come a long way from his sickly childhood!

Despite these injuries, Theodore Roosevelt was one of the few Presidents

who thrived on the responsibilities and vigorous life at the White House. He was then a stocky man of 5 feet 10 inches, weighing a little under 200 pounds. He was barrel-chested and rather long-legged, with slightly sloping shoulders, and he had a tendency to hold his head forward on his thick, short neck. He had a large nose, and always wore a mustache which covered a prominent but perfect set of teeth. His jaw was broad, with a cleft in the middle of his chin. As he grew older, his hair became darker and had a tendency to curl unless cut often. He was a powerful and vigorous walker, and, after meeting him, few people forgot his firm handshake and contagious smile. His blue eyes looked smaller than they really were due to the thick concave lenses which he wore constantly. He ate heartily and drank mild wines in moderation.

After leaving the White House, Roosevelt took a trip to Africa in the spring and summer of 1909. On his return to the United States he again became involved in the political affairs of the country, and in 1912 he left the Republican party to run against Taft as a Progressive or Bull Moose candidate for the presidency.

During the campaign, Roosevelt was scheduled to make a speech in Milwaukee on October 14. As he left the old Fitzpatrick Hotel, a few blocks from the auditorium where he was to speak, a crowd of admirers immediately surrounded his car. One of this group, a man named John Flammang Schrank, suddenly shot Roosevelt in the chest. Schrank was quickly overpowered by Albert Martin, Roosevelt's secretary, and hustled away to jail, later to be adjudged a victim of dementia praecox and sentenced to the Central State Hospital for the insane at Waupun, Wisconsin. Roosevelt did not seem to be badly hurt, but he was advised to go to a hospital immediately for more thorough examination and treatment. Nevertheless, he insisted on fulfilling his engagement at the auditorium. On facing his audience, he removed his manuscript from his pocket and found to his surprise that the bullet had bored straight through the papers and through his metal spectacle case, and that his shirt was covered with blood. He continued with his address but directly afterward was taken by an ambulance to the Emergency Hospital.

There Roosevelt was examined by Drs. S. L. Terrell, who was a member of the party, R. G. Sayle, and S. A. Stratton, both of Milwaukee. Dr. Joseph Colt Bloodgood, of Johns Hopkins Hospital in Baltimore, had happened to be in the audience, and he soon appeared at the Emergency Hospital to offer any assistance possible. After examination and consultation by the physicians, the press issued the following bulletin.

"Colonel Roosevelt has a superficial flesh wound below the right breast with no evidence of injury to the lungs. The bullet is lodged somewhere in the chest wall because there is but one wound and no sign of injury to the lungs. Bleeding was insignificant and the wound was immediately cleaned externally and dressed with sterile gauze by R. G. Sayle, Consulting Surgeon of the Emergency Hospital. As the bullet passed through Colonel Roosevelt's army overcoat, other clothing, doubled manuscript and metal spectacle case, its force was much spent. The appearance of the wound also presented evidence of a much spent bullet."

Because Roosevelt was not suffering from shock and had no pain, the local physicians consented to his removal to Chicago. Through an error in delegating responsibility, four Chicago surgeons—Drs. Arthur Dean Bevan, L. L. McArthur, A. J. Ochsner, and J. B. Murphy—were asked to take care of him, but it was Dr. J. B. Murphy who eventually took charge of the case. Roosevelt's daughter, Alice Longworth, and Dr. Alexander Lambert of New York were notified and hurried to Chicago, while Roosevelt was taken to Mercy Hospital in Chicago by train. The next morning, the first bulletin was issued from Mercy Hospital to the press.

"The bullet entered the chest wall without striking any of the vital organs in transit. The wound has not been probed. The point of entrance is one inch to the right and one inch below the right nipple. The bullet wound ranged upward and inward four inches, going deeply into the chest. There is no evidence the wound will prove fatal. Pulse 90; temperature 99.2°; respiration 20; leukocytes 8,200. No operation to remove the bullet is indicated at the present time. His condition is hopeful, but the wound is so important as to demand absolute rest for a number of days."

The bulletin was signed by all four of the Chicago doctors.

The information in this bulletin was based on physical and x-ray examination, but it failed to mention the fact that the fourth rib was fractured. There was no evidence of puncture into the pleural cavity or lung, however. Dr. Murphy stated informally that if the bullet had not been deflected, it would have penetrated the arch of the aorta or the heart cavities themselves. A second bulletin was issued that evening:

"The records show that Colonel Roosevelt's pulse is 86; temperature 99.2° and respiration 18; that he has less pain in breathing than this morning; that he has practically no cough nor bloody expectoration. We find him in magnificent physical condition due to his regular physical exercise and his habitual abstinence from tobacco and liquor. As a precautionary measure he has been given to-night a prophylactic dose of antitetanic serum to guard against the development of lockjaw. Leukocyte count 8,800, lymphocytes 1,150."

Roosevelt was very attentive to what his physicians had to say during consultation, and, in describing his own condition to a close friend, he remarked, "There are only three possible dangers, pleurisy, pneumonia and blood poisoning; the bullet is relatively harmless, but the breaking of that rib might result in pleurisy or even lead to pneumonia, and blood poisoning is a possible late complication from infection of the wound"—pretty good logic from a layman. It is significant to note that there was no probing of the wound or surgical interference as was the case with Lincoln's and Garfield's wounds. It is hard to tell if this fact had any causal effect on Roosevelt's recovery, but in any case, he pulled through without any complications.

In the fall of 1913, Roosevelt accepted an invitation to make addresses in several South American countries. Before leaving home he decided to make a study of the birds, animals, and vegetation in the tropics. He also wanted to discover, if possible, the source of the "River of Doubt." Thus, a trip which had originally been planned to last six weeks was stretched out

to almost eight months. Almost at the beginning of the trip, most of his company developed malaria. Then, while Roosevelt was attempting to shoot one of the many rapids in the river, his canoe upset and he was thrown forcibly against a jagged projecting rock. He received a deep gash in his thigh, which quickly became infected despite first aid attention. His leg became very swollen, and pus drained profusely from the wound. The entire retinue was held up for several days, and Roosevelt secretly made up his mind to end his own life if he was unable to continue the journey. However, his attendants fixed up a litter, and he was soon on his way. Several abscesses developed in his body, and these had to be treated constantly with moist sterile dressings. Several weeks after this accident he had severe attacks of malarial chills and fever. Both the accident and the illnesses of this trip continued to affect Roosevelt's health during the remaining years of his life.

On February 5, 1918, "Teddy" entered the Roosevelt Hospital in New York City. The diagnosis of his condition on admittance was abscess of the thigh, inflammatory rheumatism, and bilateral acute otitis media. The inflammation in his leg was a recurrence of the abscess from the severe injury he had sustained on his South American expedition. The concurrent infection in his middle ears was the result of an upper respiratory infection. This condition, already serious when Roosevelt was admitted to the hospital, became purulent in character within a few days. When his fever kept climbing, both ear drums were opened, and for a few days his hold on life was tenuous. In about ten days the inflammation subsided and there was no more discharge from the right ear, but the left ear continued to give trouble. An x-ray picture of the left side of head showed involvement of the left mastoid bone, but the consulting physicians agreed that surgical interference was not necessary. This conservative treatment of Roosevelt's mastoiditis seems more overcautious than wise. With such a history of purulent otitis media, followed by a positive x-ray finding of involvement in the mastoid bone, a simple mastoidectomy would almost certainly have cleared up the trouble in a short time. Medical treatment, however, continued until he was discharged from the hospital on March 4, 1918. He had by then recovered from the thigh abscess, but he was now afflicted with a permanent and almost total catarrhal deafness from mastoiditis. Thus, at the age of sixty, Roosevelt was blind in his left eye and deaf in his left ear.

It was to take more than that to keep Roosevelt down, however. In June, 1918, while on a tour in the Middle West, he had a severe attack of erysipelas in his leg. He was laid up for several days but refused to enter a hospital. About five months later, the pain in his muscles and joints became very severe, and on November 11, 1918, Roosevelt was readmitted to the hospital with a diagnosis of inflammatory rheumatism. His past medical record revealed the fact that a badly abscessed tooth had been extracted twenty years previously and might have some bearing on his present condition. During his stay in the hospital he had a great deal of pain and

sat up in a chair most of the time. His own diagnosis of the condition was sciatica, which of course was incorrect.

Discharged from the hospital as improved on Christmas day, 1918, Roosevelt made his final retirement to Oyster Bay. For ten days he seemed to gain in strength and became quite cheerful. On January 5, 1919, he wrote an editorial and spent a comfortable day, going to bed about eleven o'clock in the evening. At 4:00 a.m. the next morning, his attendant, James Amos, noticed that he was breathing strangely. The nurse was called but when she reached the bedside she found him dead. He died on January 6, 1919, at the age of sixty. A statement by Dr. Faller and Drs. John H. Richards and John A. Hartwell of New York read as follows:

"Colonel Roosevelt had been suffering from an attack of inflammatory rheumatism about two months. His progress had been entirely satisfactory and his condition had not given cause for special concern. On Sunday he was in good spirits and spent the evening with his family dictating letters. He retired at eleven o'clock and at four o'clock in the morning his man servant who occupied an adjoining room noticed that while sleeping quietly, Col. Roosevelt's breathing was hollow. He died almost immediately, without awakening. The cause of the death was embolus in the coronary artery."

As this report indicates, coronary embolus was the primary cause of death, and informal opinions given by his physicians at the time of his death seem to indicate that the inflammatory rheumatism was not a contributory cause. However, the numerous previous infections Roosevelt had suffered—tropical fever, mastoid infection, the fistulous abscess in his thigh, and the abscessed tooth—very probably hastened his end.

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William Howard Taft

1857-1930

WILLIAM Howard Taft was born in Mt. Auburn, a suburb of Cincinnati, Ohio, on September 15, 1857. He was the son of Alphonso and Louisa Torrey Taft, and was one of the few Presidents to be born in a large city. He attended the public schools of Cincinnati where he played football and baseball and gave a good account of himself in boxing and wrestling. He was a big young man, quiet, good-natured, and humorous, and took an enormous interest in school politics. In college he was forbidden by his father to play football, but he was stroke on the varsity crew. When he was twenty-two years old, he had occasion to use his great physical strength to vindicate his father's name. A Lester Rose, editor of a sensation sheet, printed some false stories about Alphonso Taft, and young Will decided to look him up. On meeting Rose and identifying himself, Taft planted a left hook on his nose. This was followed by a rough-and-tumble fight which ended with Taft using Rose's head as a hammer on the pavement.

By the time Taft reached his full physical growth, he was a tremendous man, standing 6 feet 2 inches tall and weighing 332 pounds. He was a big, kindly, well-meaning gentleman whose cordiality and charm endeared him to all his associates. His generous short neck supported a large florid face with good-natured wrinkles and sloping jowls, topped by a crop of chestnut hair that gradually thinned with the years. He had twinkling blue eyes, a blond moustache, and usually a beaming countenance. His hands were large and soft and his handshake gentle. He had a pleasing, soft, high voice with little resonance and an easy gurgling laugh that became famous and was regarded as "a national possession."

In June, 1886, Taft married Helen Herron, and in the course of time they had three children, two sons and one daughter. At the time of his marriage Taft was already well started on what was to be a long and distinguished career in law. In 1887 he became a judge in the Cincinnati Superior Court, and in the next ten years served at different times as United States solicitor general, United States circuit judge, and dean of the Law School of the University of Cincinnati. In 1900, Taft became president of the United States Philippine Commission and the following year civil governor of the Philippines.

Up until this time, when Taft was in his forties, there is no indication that he had been subject to any serious ill health. During his tenure of office as governor of the Philippines, however, while he was working very hard on affairs of state, as well as trying to control the spread of epidemics

and improve public health, he developed the first symptoms of a dangerous illness. He suffered intense pain throughout his body, ran an intermittent fever, and had a rash on the dorsal side of his hands and feet which extended up his forearms and legs. His attending physicians made a diagnosis of dengue fever. This disease is commonly known as "breakbone" fever, and the tropical mosquito *aedes oegypti* acts as the carrier for the virus. Taft grew steadily worse, and two weeks later an abdominal abscess developed. He was carried from Malacanan Palace to the First Reserve Army Hospital. After medical treatment and many consultations, an operation was advised and performed by Dr. Rhoads, the army surgeon who afterward became Taft's aide when he was President. A large incision was made and an abscess of the liver found. The abscess was evacuated and proper drainage instituted. Symptoms of septicemia developed a short time later, and a second operation was performed.

For weeks, Taft was unable to leave his bed, and during this slow convalescence, General Funston, the captor of Aquinaldo, was lying in a nearby hospital room recuperating from an appendectomy. One day when Manila was shaken by a violent earthquake, Funston rushed into Taft's room and shouted, "We must carry out the governor." Funston, who was not more than 5 feet 4 inches tall, and his orderly, who was even smaller, were finally convinced, however, that Taft's weight and inability to walk would make the job impossible. It wasn't until the early winter of 1901 that Taft had recovered sufficiently to make the trip home from Manila to San Francisco.

In 1903, Taft suffered from a mild attack of amebic dysentery but recovered completely in several weeks, and there is no record that he had any further illness until long after his presidential term. Elected President in 1909, Taft set a record for presidential size, outweighing even Cleveland by a considerable margin. After getting stuck in the White House bathtub several times, he had a very large one specially made. He was a heavy eater and took many cat-naps during the day—in fact, he was very apt to go to sleep at the most inopportune times. Nevertheless, Taft was a tireless worker. He had the temperament and fine type of mind that the years enrich, and advancing age made him even more mellow, human, and humorous. He lived for seventeen years after leaving the presidency, serving in a post of high honor as Chief Justice of the United States Supreme Court, and in general his health seemed surprisingly unaffected by the heavy load of presidential responsibility.

As the years went by, however, Taft's health grew worse, not better. His siege of tropical fever and the subsequent operation while he was in the Philippines had undoubtedly left his constitution subtly weakened. "I am really in an invalid state," he reported in the spring of 1928. His blood pressure was high, and the possibility of his arteries hardening alarmed him. Ominous signs in the summer of 1929, when he was seventy-one, seemed to indicate that the end was not far off, or that, at best, he could not continue with his court work. Taft was determined not to be one of those jurists who cling to their high posts even in the face of physical or mental

disability, and it was growing daily more obvious that the Chief Justice was ill as well as tired.

Taft had for some time been suffering from a bladder ailment. Then on December 31, 1929, Charles P. Taft, his half-brother, died in Cincinnati. The Chief Justice, despite his poor health, insisted on going to the funeral and laying his wreath of affection and gratitude on the grave of the man who had helped him all his life with advice and financial support, and whom he had loved as his own brother. This strain aggravated his condition. He slept badly, and his doctors told him as the new year began that he must put aside, for seven or eight weeks at least, the work of the court. Taft did not yet abandon hope, however. He told his associates that he would return on February 24 and would, in the meanwhile, rest at Asheville, North Carolina. Before leaving, he went to the hospital for treatment and seemed as alert as ever. His younger brother, Horace Taft, could not afterwards recall ever seeing him that way again.

Taft stood the trip to North Carolina well, and was able to take an occasional automobile trip with Mrs. Taft in the warm sunshine. Their rooms at the Grove Park Inn looked out over the golf links and toward the blue shadows of the Smoky Mountains. Toward the end of January, however, his condition grew worse. The Chief Justice kept insisting that he wished to return to Washington, and he suffered from hallucinations that he was setting out on the journey at once. It became clear to him then that he could no longer "pull his weight in the boat," as he phrased it, and he knew what he had to do. On February 3, his resignation from the Supreme Court went to the President of the United States, and the Chief Justice went home to die.

Ill as he was, Taft was dressed when his train reached the Union Station in Washington at 7:05 a.m. on the morning of February 4, 1930. He remained in his drawing room, however, while his car was being transferred to a level nearer the streets. Dr. Francis R. Hagner, Taft's physician, several times entered the stateroom to speak to his distinguished patient, but he had some difficulty in making Taft realize that the time had come to leave the car. Gently the doctor asked him to get to his feet, but it was necessary for several others to assist him. Step by step, Dr. Hagner and his aides guided the footsteps, once firm and vigorous, of the sick man as he left the train.

In the narrow passage between his stateroom and the side of the sleeping car, the former President grasped the handrails to steady himself, although he literally was being carried along. A trained nurse, who had been with Taft throughout his entire illness, stayed nearby. After Taft reached the vestibule of the car, he was supported until other attendants could bring a straight-backed chair, into which he was eased. Then the chair was picked up by three men who lowered it gently down the steps to the station platform. Several times Taft reached out with weakened hands to take hold of the nearby supports above the steps of the car. Finally, Dr. Hagner, who was standing on the train platform with Mrs. Taft, grasped his pa-

tient's hands and thus guided him into a wheel-chair which had been rolled up for him.

As Taft settled into the chair, Dr. Hagner said, "That's rather a tight fit, but it won't be for long." A trace of the famous Taft smile lighted his pale, drawn face for an instant and his eyes seemed almost to twinkle, but the lids soon drooped again. Occasionally and with apparent effort, Taft opened his eyes to look about, but he spoke to none of those who had gathered to meet him. His listlessness and the change in his appearance shocked the friends who now saw him for the first time since his illness.

His chair was rolled slowly across the broad concourse of the Union Station to the regular automobile entrance, where the automobile of Associate Justice Sutherland of the Supreme Court, an old friend and colleague, awaited. As he came out into the light of a murky dawn, Taft was greeted with a series of explosions from photographers' flashlights. He seemed momentarily startled but, veteran of many such experiences, he quickly regained his composure. The wheel-chair was rolled almost to the running board of the automobile, and the former President, held firmly by two attendants, was lifted through the car door with two men inside holding his hands and guiding him. They eased him to the edge of the seat and then assisted him to a more comfortable position.

Mrs. Taft took a place beside her husband, while Dr. Hagner, the trained nurse, and Mr. Taft's secretary entered another car which followed closely on the three-mile run to the Taft home. The machine stopped at a side entrance of the house, and the sick man was again helped from the car through the doorway to an elevator which had been installed near this entrance several years ago when he first became seriously afflicted with heart trouble.

After Taft was put to bed, he underwent an hour's examination by Drs. Hagner and Thomas A. Claytor, who afterwards issued a pessimistic statement indicating that Taft had suffered a general breakdown of the circulatory system, complicated by a bladder ailment, and that his condition was extremely serious. The bulletin read:

"For some years, Chief Justice Taft has had a very high blood pressure associated with general arteriosclerosis and myocarditis. Together with these conditions he has had a chronic cystitis. He has no fever and suffers no pain. His present serious condition is the result of general arteriosclerotic changes."

Nevertheless, Taft's friends retained some hope that the lifting of the burden of Supreme Court duties might serve to aid him toward recovery. Further optimism had been aroused when, earlier in the day, on Taft's arrival at the Union Station, Dr. Hagner had said that as far as he could determine there was no immediate danger to the life of the former President and that no plans had been made to summon members of the family who resided outside the city.

Early that afternoon, Taft's doctors decided to call into consultation Dr. William Sidney Thayer of Baltimore, who had attended Taft many times

in the past and was considered an expert on heart diseases. It was expected that Dr. Thayer would assist in a blood test to determine whether there were signs of uremic poisoning from the kidneys. There are no records to indicate what further efforts at diagnosis and treatment were made, but in any case the eventual outcome of Taft's illness could not be in doubt. He was rapidly nearing the close of a long and fruitful life.

For days, Taft lay unconscious and nearly lifeless, rallying a little at times but able to take very little nourishment. Only at rare intervals did he recognize even the members of his family. His condition remained essentially unchanged until late in the afternoon of March 8, 1930, when he died in his sleep at the age of seventy-two. He had finally succumbed to myocarditis, or failure of his heart muscle, which was complicated by the arteriosclerosis of old age, hypertension, and a long-standing bladder ailment, cystitis.

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Woodrow Wilson

1856-1924

WOODROW Wilson has taken his place in history as one of the greatest of American Presidents, the man who first saw the path his country must travel if it and the rest of the world were ever to achieve permanent peace. His intelligent idealism and passionate devotion to the causes of peace and co-operation are revered today, but during his lifetime they brought him only personal defeat and a tragic sense of failure. His untiring but unsuccessful fight for American participation in the League of Nations was undoubtedly as much a cause of his death as any purely physiological factor. He was a casualty of the Armistice as much as thousands of soldiers were casualties of the war, and his fall was perhaps even more tragic than theirs in its implications.

Wilson's life began in Staunton, Virginia, where he was born on December 28, 1856, the third of four children of Joseph Ruggles Wilson and Janet Woodrow Wilson. Christened Thomas Woodrow, he was called Tommy until he graduated from college, when he became officially known as Woodrow Wilson. As a child he was flaxen-haired, frail, and freckled, and had a long broad head. He wore glasses from the age of eight until his death. As he grew a little older, his hair became brown and very thick, and his long legs and short body gave him a rather awkward appearance. He had a long lantern jaw, a strong sensuous mouth, big and resolute with a loose upper lip, and big ears well set below a narrow long cranium—the typical horse-face of a North of Ireland man. His blue eyes were bold, clear, and wistful, the eyes of a dreamer. At full maturity he was 6 feet tall and his weight averaged between 175 and 185 pounds.

In 1873, at the age of seventeen, Wilson enrolled at Davidson College near Charlotte, North Carolina, but was forced to leave school during the first term because of "delicate health." There is no mention of the exact nature of his illness except for the rather ambiguous statement that he had "both physical and mental indigestion," but he stayed at home for a year to recuperate. He then attended Princeton University where he was graduated in 1879. During his studies there, he was operated on for an inguinal hernia and made a complete recovery. After graduating from Princeton, Wilson studied law, but he now developed recurrent and prolonged spells of indigestion, which finally forced him to spend another year of inactivity to regain his health and strength.

In 1885, Wilson was married to Ellen Louise Axson, and in the following years three daughters were born to them. Meanwhile, Wilson had con-

tinued his legal and political studies, and from 1885 to 1890 he taught history and political economy, first at Bryn Mawr College and then at Wesleyan University, finally retiring to teach at Princeton in 1890. In 1895, during the period of his most active literary work, he had a severe retinal hemorrhage in his right eye, which later caused a retinal detachment and left the vision in this eye badly impaired throughout the rest of his life. This hemorrhage was caused by a nephritis, an inflammation of the kidney, with albuminuric retinitis. Not long afterward he was also afflicted with a severe neuritis in his left arm and leg.

Wilson had his first serious nervous breakdown in 1896. His academic pursuits had reduced him to mental and physical exhaustion, but at the same time he was very restless and could no longer sit quietly in conversation with his friends as he had loved to do. The true diagnosis of this condition was nervous exhaustion, and a prolonged bicycle trip through Europe was prescribed for him. Again in 1907, after he had become president of Princeton University, he had a recurrence of the same malady. This time he went to Bermuda to regain his health. During his entire adult life he suffered from what his physicians called "lack of digestive assimilation," due to an abnormality of his gastric secretions. When he arrived at the White House, he brought with him a stomach pump which he used almost daily until he was ordered by the White House physicians to discontinue the practice. Another form of self-medication in which he indulged was the promiscuous use of headache tablets—probably the kind made from coal tar products—and when this habit threatened to produce a recurrence of the nephritis he had suffered previously, the tablets were forbidden by his personal physician.

Wilson left the presidency of Princeton University to become governor of New Jersey in 1911, and the following year he was elected President of the United States, the first Democrat to hold that office in many years. At the time of his inauguration he was fifty-six years old, and he was destined to devote the rest of his life, until sickness immobilized him, to courageous fighting for his political and social principles. There are many who think that Wilson was the most intelligent President the country has had, and certainly his wisdom was supported by a gay and indomitable spirit. He was not a man who made friends easily, however, and he often shrank from strange and unpleasant contacts. Usually calm and reserved, there were occasions when sharp flashes of temper cost him much good will and brought him remorseful sorrow.

In 1914, soon after Wilson became President, Mrs. Wilson died. The following year he married Edith Bolling Galt, a widow, and it was she who was mistress of the White House during the major part of Wilson's two presidential terms. After the Armistice, she accompanied Wilson when he attended the Peace Conference. At this time he was in excellent physical condition. He was rather heavy-set, weighing more than at any other time in his life, but he was still muscular, with a strong chest and stout limbs. Except for a tic, a twitching in one eye, he looked to be in perfect health.

The sessions of the Conference were long and arduous, however, many of them lasting twelve and fourteen hours. After a period of this grueling work, he suddenly developed a severe infection of the entire upper respiratory system, an influenza that also seemed to affect his central nervous system.

One of the complications that frequently followed influenza in the epidemic of 1918 was a mild encephalitis, and it seems probable that Wilson too contracted this disease. It is often accompanied by definite personality changes, and it was noticed when Wilson returned to the Conference sessions that he seemed a different man—irritable, impatient, quarrelsome, and suspicious of even his closest friends and attendants. It is possible that certain organic changes in the brain took place at this time, and there is some evidence that he had also developed a "Charcot joint" in one knee. By the time he returned to Washington on July 8, 1919, however, he seemed to have recovered completely and become his old self again.

There was one aftermath of Wilson's siege of "flu"—the development of occasional attacks of asthma, which brought with it broken sleep. The ability to sleep at will, to relax completely for five minutes or an hour, had been one of Wilson's greatest physical assets. A short nap would refresh him completely and enable him to return to work with renewed vigor. The gradual loss of this ability and the increasing sessions of sleeplessness probably had much to do with the decline on which his health now began.

Once home again, Wilson found that the opposition of Congress toward his peace treaty and toward participation in the proposed League was overwhelming. Wilson was bitterly disappointed but determined not to give up. In August, 1919, he decided to make a tour of the country to bring his peace plan to the American people in a personal appeal. Because of his diminishing strength, his physicians advised strongly against his making an extended trip, but Wilson was determined to go. After giving a few addresses, however, he became restless, irritable, and very discouraged because of the unfriendly attitude of his audiences. At Pueblo he wept during his speech, and that evening he ran a fever and was unable to sleep until given a narcotic. His mouth drooled, and he had all the premonitory symptoms of an impending cerebral hemorrhage. On his return to Washington on September 28, 1919, he was put to bed, a sick man.

A few days later, on Thursday, October 2, 1919, at 8:50 a.m., the expected stroke came. Wilson had gone to the bathroom and was sitting on the stool when he suddenly fell forward, striking his head on the plumbing of the bathtub. His groans attracted the attention of Mrs. Wilson, who found him lying on the bathroom floor in a semi-conscious condition. His left leg was crumpled underneath him, and there was a long cut on his temple and another on his nose, which was badly bruised. Dr. Grayson was immediately summoned from Philadelphia, and on his arrival he called in three men for consultation—Dr. Francis X. Dercum, a specialist in internal medicine, Rear Admiral E. R. Stitt, of the Naval Medical Corps, and Dr. Sterling Ruffin, of Washington, Mrs. Wilson's family physician. After a two-hour consultation, these men came to the conclusion that the

President had a cerebral thrombosis, a blood clot in one of the blood vessels in the right side of his brain. This clot caused a paralysis of the motor nerves on the left side of his body. The vital question was whether the clot would absorb, or whether it would permanently damage the brain tissue in this area. Dr. George de Schweinitz, a noted ophthalmologist, was called in to examine Wilson's eye grounds to help in making a prognosis.

During that autumn of 1919, the White House took on the appearance of a hospital, with special nurses on duty day and night, frequent visits of physicians, and all the medical equipment necessary for the treatment and care of the distinguished patient. Wilson's general health improved but his speech was indistinct and muffled. Although the paralysis in his left side was permanent, he was able to stand up with the aid of a cane and to walk a little at times, dragging his useless foot. The left side of his face was also permanently paralyzed, and his appearance became that of an old gray man with a lean, almost wizened, face, who smiled automatically to hide his facial disfigurement.

The secrecy which kept the exact condition of the President from the public resulted in many false rumors, one being that he had syphilis and another that his mind had failed. A committee from the Senate was actually formed to investigate the latter charge. After a visit of more than half an hour and a lively duel of wits, the committee was convinced that Wilson's sanity was unquestionable and that he was still the scholar and thinker of old.

After leaving the White House in 1921 at the end of his second term, Wilson and his family moved to a private residence on S Street. There he spent his remaining days as an invalid, still partially paralyzed and conscious always that his ideals had met an undeserved defeat. He never lost his sense of humor and brave spirit, however, and he spent much time thinking over the events of the past. His condition changed but little until January 31, 1924, when he suffered an acute digestive disorder. For two days he hovered between life and death, and on February 1 he was so weak that he was unable to speak and became unconscious.

On February 2, however, according to a recent statement by his daughter, Eleanor Wilson McAdoo, he regained consciousness, and his mind was as calm and clear as ever before. His eyes shone with a light of inner peace and understanding as he told his daughter, Margaret, who sat at his bedside, of his final reconciliation to the fact that the United States had not joined the League of Nations. "The time will come," he said quietly, "when this country will join such a league, because it will know that it has to be. And then and then only will it work." And he added with his old courage and gentle humor, "You know, God really does know better than I."

Woodrow Wilson died on the following day, February 3, 1924. His death was the final result of a cerebral thrombosis brought on by a generalized arteriosclerosis which affected the arteries of the brain. It is hoped that the faith for which he lived, and with which he died, will be justified

by the country he loved and served. No other testimonial can adequately honor his memory.

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Warren G. Harding

1865-1923

WARREN G. Harding, the President who attempted to restore the country to "normalcy," was himself a typical average citizen. He was born on November 2, 1865, on a farm near Corsica, later called Blooming Grove, in Morrow County, Ohio, the oldest of Dr. and Mrs. George Tyron Harding's eight children. With no history of illness during his childhood, Harding grew up to be a strong robust boy with a very sunny disposition. As a young man, he played with the gang, frequented saloons and gambling rooms, and was even known to tread the primrose path. He played several instruments in the town band and was an enthusiastic sportsman, known in his younger days as a hunter, fisherman, and ball player. While playing first base in a charity game in Marion, Ohio, he dislocated a finger. In later years, he confined himself to horseback riding and to golf, which he played with a score consistently under 100.

Harding was a handsome young man, a little over 6 feet tall, with a straight figure, well-carved, mobile features, a good shock of black hair, dark olive skin, and fine even teeth. He had an actor's mouth and a clear vibrant voice of great resonance. His glasses, which he used for close work and in making gestures, were pinned to his coat lapel. During his presidency, Harding's hair turned white and the lines in his face deepened. His large head was supported by a full neck, and his straight nose, kindly eyes, and large but pleasant jaw made up a good-looking countenance. His straight hair was always well brushed and his heavy eyebrows neatly trimmed. Harding loved to chew tobacco and was not averse to a drink at most any time. He was generally regarded as a "hail fellow, well met."

Both Harding's father and one of his brothers were physicians, and it was his father's sincere wish that Warren should become a doctor. Instead, however, Harding became a printer and newspaper man, and later owned and edited the *Daily Star* at Marion, Ohio. He was also fortunate in forming an unusually close business and political partnership with a wife more high-spirited and perhaps more ambitious than he, and to whom he brought lasting consolation for the unhappiness of an imprudent girlhood marriage which had ended in divorce. Florence Kling had married Henry DeWolfe when she was eighteen years old, and had borne him a son, Marshall DeWolfe. In 1891, at the age of thirty-one, she married Warren Harding, who was five years younger than she. They had no children. From the beginning, Mrs. Harding took an active part in her husband's business affairs, and in 1892, she took full control of his newspaper for several weeks when Harding was ill.

From 1900 to 1904, Harding served in the Ohio State senate, and from 1904 to 1905 was lieutenant governor of Ohio. In 1915 he was elected to the United States Senate and began to achieve national recognition. During this period of middle life, Harding was not entirely free from sickness. He made several trips to Battle Creek Sanitarium where he was treated for an enlarged heart combined with arteriosclerosis. He had also developed diabetes, but apparently this disease was kept in check by control of diet and general hygienic measures. His systolic blood pressure at this time was about 180, somewhat higher than would be normal for a man of his age.

Sometime after Harding was elected President in 1920, both he and his wife narrowly escaped death in a railway accident. The truck of the private car in which they were riding was defective, and suddenly the whole car was derailed. Except for some bumps and bruises, however, there were no serious consequences. It was later in his term that serious ill health began to threaten. Early in 1923, the President had an attack of influenza, and this combined with the terrific strain of Cabinet dissension and political trouble, left him a very exhausted man. His convalescence was further prolonged because of his weakened heart and a mild case of nephritis (kidney disease). Nevertheless, Harding had decided to tour the country and talk to and with the people on matters of national importance, and he started his long and strenuous trip on June 20, 1923. On July 5, he sailed from Tacoma for Alaska. During the voyage he received some very bad news from Washington, which resulted in a severe emotional collapse. His stay of two weeks in Alaska was uneventful, however, and it was not until the return boat trip that his physical condition became alarming. On the boat he became acutely ill with severe stomach pains and vomiting. His physicians made a diagnosis of ptomaine poisoning from eating crabmeat, although a careful check of the steward's lists later failed to reveal any serving of crabmeat during the trip. When the party reached Seattle, several physicians were called in consultation, and their final conclusion was either that Harding was suffering from some organic disease, most probably of the heart, or that there had been a small hemorrhage in the brain. In view of what happened later, these upsets of his digestive tract were only preliminary signs of things to come.

President Harding made his last public address in Seattle on July 27, 1923, just six days before his death. On July 28, he started by train for San Francisco, where he arrived early in the morning of July 30. The presidential party was then taken to the Palace Hotel where they occupied the entire eighth floor. There were three doctors in constant attendance on the President—Brigadier General Charles E. Sawyer, the White House physician and long a personal friend of Harding's in his home town of Marion, Ohio; J. T. Boone, U.S.N., a naval surgeon also attached to the White House; and Dr. Hubert Work, Secretary of the Interior, who had formerly been president of the American Medical Association. These three men immediately called in consultation Dr. Ray Lyman Wilbur, president of Stanford University and of the American Medical Association,

and Dr. Charles M. Cooper, of Stanford University, who was a noted heart specialist.

The findings of these physicians were issued in official bulletins which traced the tragic course of Harding's illness:

"July 30, at about 10:30 a.m.: The President had a fairly comfortable night, with several hours' sleep. His temperature at 9:00 a.m. was 101°; pulse 118; respiration 33. The abdominal symptoms following the digestive disturbance which he experienced while on the boat are now localized in the gall-bladder region. There were no peritoneal symptoms; the lungs are clear. The white blood cells number 10,800, with 82 per cent polymorphonuclears. The kidneys are functioning satisfactorily, and there are no disturbances of the nervous system, except those associated with fatigue. While his condition is acute, he has temporarily overstrained his cardiovascular system by carrying on his speaking engagements while ill. It will be necessary for him to have complete rest during the period of his acute symptoms."

"July 30, 5:10 p.m.: The President's condition is as follows: temperature, 100.6°; pulse 125; respiration 44 and somewhat irregular. There is some cough and evidence of congestion in one lung. He has taken some nourishment. Except for weakness and restlessness he has been fairly comfortable during the day, though his condition is a serious one."

"July 30, 9:00 p.m.: Definite central patches of bronchopneumonia have developed in the right lung, as indicated clinically and by the roentgen ray. Nourishment is being taken regularly, and the abdominal symptoms are less noticeable. While his condition is grave, he is temperamentally well adapted to make a strong fight against the infection. Pulse, temperature and respiration are about the same as in the previous report."

"July 31, 9:00 a.m.: The President had a fairly comfortable night, with considerable restful sleep. His temperature is 100°; pulse 120; respiration 40 and regular. There has been no extension of the pneumonic areas, and the heart action is definitely improved. Nourishment and fluids are being taken regularly. Elimination is satisfactory. He expresses himself as better and less exhausted."

"July 31, 4:00 p.m.: The President has maintained the ground gained since last night. His temperature is 100°; pulse 120; respiration 44 and regular. Nourishment is taken regularly, and the laboratory findings indicate elimination is improving. In general, he is more comfortable and is resting better."

"July 31, 11:10 p.m.: The President's condition is: pulse 116; temperature 100.2°; respiration 40. He is resting comfortably. No further reports will come from the sick room tonight unless unfavorable symptoms develop."

"August 1, 9:30 a.m.: The President is fairly comfortable this morning after a few hours of sleep. His breathing is less labored, and there is but little cough. The lung condition is about the same as yesterday. He is still much exhausted, but maintains his normal buoyancy of spirit. Small amounts of food are taken regularly, and there is regular and satisfactory elimination. The temperature is 99°; pulse 114; respiration 30. While progress is being made, every care is necessary to assure freedom from further complications."

"August 1, 4:30 p.m.: The President is now resting comfortably after a somewhat restless day. The temperature reached normal during the day, and the pulse has varied from 116 to 120 and the respiration from 36 to 40. There is evidence of slight improvement in the lung condition. Otherwise there is no marked change."

"August 2, 9:30 a.m.: The President had several hours of restful sleep during the night, and, except for the marked exhaustion of an acute illness, expresses himself as feeling easier this morning. The temperature is 98.2°; pulse 100; respiration from 32 to 40. The lung condition shows definite improvement. Small quantities of food are being taken, and elimination remains satisfactory. While recovery will inevitably

take some little time, we are more confident than heretofore as to the outcome of his illness."

"August 2, 4:30 p.m.: The President has had the most satisfactory day since his illness began. The evidences of infection are subsiding, but he has been left in a very weakened condition by the hard battle he has made. This afternoon the temperature is remaining normal, with the pulse rate around 100 and the respiration averaging about 30. Other factors remain about the same."

This bulletin was the most cheerful of all, and Harding's chances for recovery seemed greatly improved. Yet that same evening, August 2, 1923, Harding suddenly died, without a moment's warning. At midnight, the physicians who had been attending him issued the following lengthy statement:

Last spring, following a long period of overwork and great strain, President Harding was confined to his bed with an attack of influenza which was followed by a few nocturnal attacks of labored breathing. His recovery was slow, and he had not fully regained his normal strength and health when he started out on the trip to Alaska. He had also had some attacks of abdominal pain and indigestion, and at times he had some pain associated with a feeling of oppression in the chest. For some years his systolic blood pressure had ranged around 180, and there was evidence of some arteriosclerosis, enlargement of the heart and defective action of the kidneys. Except for fatigue and the fact that his heart and blood vessels were some years older than the rest of his body, he was in reasonably good health.

On his return trip from Alaska, he had an acute gastrointestinal attack associated with abdominal pain and fever. In spite of his illness he insisted on putting through his program of speaking in Vancouver and Seattle. He had considerable difficulty in completing his addresses in Seattle because of weakness and pain. Because of this he was persuaded to come directly to San Francisco, and arrived at the Palace Hotel Sunday morning, July 28. He dressed and walked to the automobile from the train. Sunday evening a consultation was called, because his temperature had arisen to 102° and his pulse and respirations were abnormally rapid. The abdominal difficulty had by this time been localized in the gall-bladder region, but there was a general toxemia, with fever and leukocytosis. A central bronchopneumonia soon developed on the right side. It was accompanied by short circulatory collapses, with cold sweats and an irregular pulse. Most disturbing of all was the rapid and irregular breathing suggestive of arteriosclerosis of the brain vessels in the region of the respiratory center.

Under treatment, marked improvement in the pneumonia and circulatory disturbances took place, and Thursday, August 2, he was free from fever and pain; the acute lung condition was practically gone. He was resting comfortably in bed and conversing with Mrs. Harding and General Sawyer, when he died instantaneously without a word or a groan.

We all believe he died from apoplexy or the rupture of a blood vessel in the axis of the brain near the respiratory center. His death came after recovery from the acute illness was in process. It might have occurred at any time. One of his sisters died suddenly in the same manner.

On August 3 a further statement by the consulting physicians read, in part:

As already indicated in the bulletins, the heart was enlarged, and probably the blood vessels which carry to it its nutriment thickened, for his history shows that previously he had had anginal manifestations and that during sleep the respiratory center was insufficiently fed. Furthermore, he had suffered from nocturnal dyspnea and a Cheyne-Stokes type of respiration; yet, as often happens in such cases, he had full confidence of his bodily strength; his mind remained most alert, and his judg-

ment unimpaired. At 4:30 p.m., yesterday, prior to his sudden apoplectic seizure, it seemed to Mrs. Harding and to us that the fight was won and that, with sufficient rest and the carrying out of a definite medical program, this illustrious man, in fair physical health and in full mental vigor, could be preserved for his country.

Dr. Wilbur, one of Harding's consulting physicians, later wrote a personal account of Harding's last days which revealed the President's endearingly human qualities as well as his unflagging courage and humor. The partial reproduction of this article which follows gives almost as vivid a picture of Harding's personality as would a full-length biography:

It seems only fair to the memory of this great man to let others know how bravely he looked death in the face, sensed victory and thought himself "out of the woods," as he put it, and then, in the twinkling of an eye, lost. All through the last months he knew his physical danger. He had had symptoms that all men know mean something serious; his physicians had warned him; but he had confidence in himself, and a strong sense of duty that drove him on right through his program until he was literally knocked off his feet . . .

Upon our first visit to his bedside, in spite of the exhaustion following his trip, his illness and the late hour, he took a keen interest in our examination and was delightfully whimsical in his comments. When we began to percuss his chest he said, "Lay on, Macduff." From the first his mind was always perfectly clear and he minimized his illness. In fact, one of our most difficult tasks was to persuade him that he must stay flat in bed at all times. He had so long carried out his tasks, as he saw them, regardless of personal discomfort, that he reluctantly gave in to his increasing weakness. When he was told that he must be a good soldier and carry out the orders of his physicians he answered, "Whatever you say goes"; and it did.

His acute illness came to a peak on Monday night with the rapid development of a bronchopneumonia. The quick, irregular and labored breathing distressed him and when, by stimulation, he had been relieved after a sharp attack of breathlessness, he said, "I feel much relieved, but, oh, so very tired." Even at that time when one of us left the room and wished him a good rest he replied, "That is very kind of you; I hope you get the sleep you need." On Tuesday morning he again expressed his great disappointment that he could not keep his engagements and deliver his speech. . . .

On Wednesday the infection began to subside and he felt somewhat relieved, but said he did not know before that a man could feel so tired. When Mrs. Harding felt his feet to see if they were warm, one of the physicians asked, "Are the President's feet warm?" and he answered like a flash, "This is no time to get cold feet."

Thursday morning he felt and looked like himself. He was anxious to plan for his return, but recognized his great weakness. He was so sorry to have failed to meet his engagements in California and said, "I have been thinking back about the speech I was to give here. Why, on Tuesday night I would not have had the strength to even say, 'Mister Chairman.'" In the afternoon when he was told that he had a hard swim, but was now on the shore somewhat exhausted but ready to get back his strength, and that California people were going to claim a lot of credit for their climate in bringing about his recovery, he said, "Well, tomorrow morning we will swap some stories on that. I am sorry I have not been able to take more of a part in your consultations." . . .

Thursday evening, however, found him cheerful and comfortable, planning for the days just ahead, and thinking of Washington. His wonderful wife was reading to him, his beloved friend and physician, General Sawyer, was holding his hand, and his nurse was recording his record showing improvement when a blood vessel burst in the vital centers of the brain, his body gave a convulsive twitch, and he was dead. Eager efforts to get some sign of life were of no avail. Struck down by a mortal hurt which no man's hand could forestall, he went without a pain or even a groan.

After his death, however, Warren Harding's name was not allowed to rest in peace. He became the posthumous victim of many libelous rumors, and his wife, who died a year later, was afterwards accused of an even worse crime—that of poisoning her husband. This malicious charge was manufactured by a man named Gaston Means, who had worked in the Department of Justice for a short time under Attorney General Harry M. Daugherty, the man whom President Coolidge later asked to resign because of his implication in certain government scandals. The fact that Harding died so suddenly at a moment when he seemed on the way to recovery probably was the first inspiration for the story; and Means attempted to adduce as further evidence the fact that Mrs. Harding had refused to allow an autopsy to be performed or the customary death mask to be made. He also charged that she was alone with the President during the last ten minutes of his life and that during this time she gave him his medicine as had been ordered, presumably with a bit of poison added.

Means' own character and record are enough to discredit his slanderous theory; but even if they were not, his final and crucial piece of "evidence," the fact that Mrs. Harding was alone with her husband at the time of his death, is specifically contradicted both by the physicians' official report and by Dr. Wilbur's personal account. Both statements mention the fact that General Sawyer was present when Harding died. Moreover, the woman who wrote and arranged the publication of the book containing Means' story later repudiated the whole volume as a string of falsehoods from beginning to end.

The suddenness of Harding's death, while shocking and unexpected, is perfectly understandable when one considers both his longstanding heart impairment and other dysfunctions, and the strain imposed upon his system by the acute infection he was just throwing off. All the authoritative evidence points to the fact that Warren G. Harding, at the age of fifty-seven, died of a cerebral hemorrhage following bronchopneumonia.

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Calvin Coolidge

1872-1933

CALVIN Coolidge was born in Plymouth, Vermont, on July 4, 1872, the son of John Calvin Coolidge and Victoria Moor Coolidge, both of whom were descendants of early American settlers. From his mother's ancestors he inherited a trace of Indian blood. His birthplace was a five-room, story-and-a-half cottage attached to the post office and general store of which his father was proprietor. It had been intended to name him John Calvin, Jr., but the John was soon discarded and he became simply Calvin Coolidge. Like Cleveland and Wilson, his middle name became his official first name.

As a boy, Coolidge was of average health and strength, slim and freckle-faced, with reddish hair which later turned sandy in color. There is no record that he had any childhood diseases. There was little time for play in his boyhood except for an occasional baseball game or fishing in nearby streams. When he was twelve years old, he lost his mother. Her death made a deep and lasting impression on him and may have had a great part in making him the sober and serious-minded lad he was. When he was a little older, he occasionally joined in husking and apple-paring bees and also attended a few community singing festivals.

When he was a sophomore at Black River Academy, he had his first accident. He broke his right arm in a fall and was laid up for a few days, but he soon returned to the schoolroom with his arm in a cast, and was fully recovered in a few weeks. During these high school days, Coolidge was rather slender and small for his age, and what little recreation he had took the form of playing baseball, in which he made a fairly good showing as a batter. In his senior year, his sister, Abbie, died after an illness of one week, and he learned many years later from one of her physicians that she probably died from acute appendicitis with peritonitis.

In 1889, at the age of seventeen, Coolidge decided to enter Amherst College. On his way to take the entrance examinations, however, he developed an upper respiratory infection which was followed by a particularly severe bronchitis. He did not fully recover from this illness for several months, and during this time he was forced to remain at home and was unable to continue his studies. Later, as a college student, his exercise was confined to walking and to the required gymnasium course necessary for graduation.

Following his graduation from Amherst College in 1895, he became a lawyer, and in the following years he held several offices in the city government of Northampton, Massachusetts, becoming mayor of that city

in 1910. Five years before that time, on October 4, 1905, he had married Grace Goodhue, a school teacher. They had two sons, John and Calvin. Several months before their first baby was born, Mrs. Coolidge let a fast-talking, door-to-door salesman sell her a book called *Our Family Physician* for eight dollars. Afterwards, however, she hesitated to tell her husband about the purchase, and instead she placed the book without comment on the living room table. Apparently her husband did not notice it; but a few weeks later, on glancing inside the flyleaf, Grace Coolidge found the following inscription: "Don't see any receipt here for curing suckers! Calvin Coolidge."

Coolidge continued to hold different governmental offices in the State of Massachusetts. He was a member of the state senate from 1912 until 1915, and president of that body during the latter part of this period. From 1916 to 1918 he was lieutenant-governor of Massachusetts, and governor from 1919 to 1920, when he was elected Vice President of the United States. It was during his term as governor of Massachusetts that Coolidge suffered his first illness in many years. This time it was an attack of influenza, which, though not severe, was enough to keep him bedridden for several days and at home for several weeks. It also aggravated an old bronchial infection of many years standing.

Coolidge's elevation to the presidency on Harding's death in 1923 was followed within a year by one of the greatest tragedies of his life—the death of his second son, Calvin. A blister had formed on the sixteen-year-old boy's toe while he was playing tennis on the courts of the South Grounds at the White House. The blister broke, became infected, and a general septicemia, or blood poisoning, developed. The boy died very soon afterwards, and the Coolidges never fully recovered from their shock and sorrow.

In 1924, Coolidge was elected President for a full term. During his stay in the White House he averaged nine hours of sleep each night and took an afternoon nap of from two to four hours. This may have been the result of extreme fatigue, or simply a reaction of a highly tense and emotional nervous system which needed plenty of rest. The fact that Coolidge also had symptoms of a duodenal ulcer supports the latter conclusion. It is also possible that his fatigue and excessive need for sleep may have been an unconscious expression of his grief over the death of his son, and both these factors probably influenced his unshakable decision to retire from public life in 1928. In stature, Coolidge was about 5 feet 10 inches tall, and he remained a slender man throughout his life. His outstanding feature was a sharp and narrow "Yankee" nose, which because of its structure gave a peculiar lack of resonance to his speaking voice. He had a high receding forehead with sparse sandy hair, and his eyes were rather small and deep-set beneath prominent brows and squinting lids. He wore glasses only when reading. He walked somewhat like a cat, on his toes, quickly, and with no shoulder movements. Because of a dry scalp, Coolidge had his head massaged every morning with vaseline.

Never very strong physically, Coolidge always conserved his resources,

and seldom allowed himself to get overtired. He had occasional spells of asthma, and for many years he suffered annual attacks of hay fever as well—both manifestations of allergy. A mild chronic bronchitis, which probably had its inception during his college years, caused a persistent cough. These symptoms disappeared almost completely, however, after his first two years as Vice President in Washington, where the weather was warmer and more humid, and where the exciting causes of his “pollen fever,” as it was called, were absent.

Despite his various symptoms at this time, Coolidge's one concession to the medical profession was to submit to treatment for sinus trouble. It would be hard to say whether this sinus infection was a cause or a result of his allergy, but his very narrow nose, with its deflected septum, and the chronic hypertrophy of his entire nasal mucous membranes undoubtedly contributed to the trouble. He also took a daily treatment of his own devising which consisted of sitting in a chlorine-filled room, but, needless to say, this procedure was of no benefit.

During his presidency, Coolidge's main recreation was walking, although he rode horseback occasionally and played golf once in a great while. There is a story that he had a mechanical horse put up in the White House as a substitute for outdoor exercise. In general, Coolidge was not fond of wordly amusements. He cared little for music and never attended the theater. He never played cards, gambled, or drank intoxicating liquors, although he smoked several Havana cigars of a good brand daily. Circuses were the only form of entertainment about which he was enthusiastic.

After Coolidge's retirement to Northampton, his wife noticed that he often felt of his pulse. On being questioned about it, he answered that his heart seemed to beat too fast and there were vague feelings of discomfort in the region of his heart. Repeated examinations by his local physician, Dr. Edward W. Brown, revealed nothing abnormal, but like his Vermont ancestors, Coolidge trusted in home remedies and patent medicines and didn't confide very much in his doctor. He was essentially a “self-medicated” man. He used a nasal spray every night and was constantly suspecting various kinds of food of contributing to his discomfort. He suffered more and more frequently from nausea and hyperacidity during the last few months of his life, and he became a habitual user of baking soda and “Eno's Fruit Salts.”

Some of these symptoms may have been caused by a duodenal ulcer or by an undetected coronary disease. The possibility that Coolidge suffered from some sort of heart trouble, despite the negative findings of his physician, is interesting to consider and is supported by the nature of Coolidge's death. After discussing the matter with several other doctors, one prominent physician, known throughout the country, gave his opinion in a personal letter to William Allen White:

“In my experience I have rarely known a man to have the type of heart condition such as that from which President Coolidge suffered [a coronary thrombosis] without himself having had some of the danger signs. Often the pain and discomfort and

difficulty with breathing are ascribed to some other condition, sometimes deliberately by the physician to remove fear of worry. My interpretation is that such an introspective man as Calvin Coolidge would have formed his own judgment as to the difficulties from which he suffered. . . . The mere examination of a man's chest and heart with the usual physical methods often does not elicit the pathology that is present in angina cases or in the type of patient dying with sudden heart failure from disease of the blood vessels of the heart or the walls of the heart. It would take an electrocardiograph and other refined methods, and even with these the picture may be by no means clear. I got the impression from some of those who were in immediate attendance on Mr. Coolidge that some of his symptoms went further than digestive disturbance and had to do with circulation. I rather interpreted Mr. Coolidge's decision and his stubbornness in maintaining it to his own attitude toward his own condition." [This last remark evidently refers to the decision Coolidge expressed in the famous words, "I do not choose to run."]

Coolidge's death came very suddenly at the age of sixty. On January 5, 1933, Coolidge went to his office as usual at eight-thirty in the morning. He was greeted by his former law partner, Ralph W. Hemenway, who remarked that he appeared to be as sound as ever. After working for an hour and a half, Coolidge left for his home, The Beeches, accompanied by his secretary, Harry Ross. About noon he went upstairs to his bedroom, presumably to shave.

At about one-fifteen that afternoon, Mrs. Coolidge, on returning from a shopping trip, went upstairs and found her husband, in his shirt sleeves, lying on his back on the floor. Dr. Brown was summoned immediately, and after examining the body he stated that death was caused by coronary thrombosis and had probably occurred half an hour before Mrs. Coolidge's discovery of the tragedy. Calvin Coolidge, reserved and laconic in life, had been just as quiet and abrupt in the manner of his death.

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Franklin Delano Roosevelt

1882-1945

IN the late afternoon of Thursday, April 12, 1945, the shocking and unexpected news of the death of Franklin Delano Roosevelt was broadcast to the nation and the world. The stunned and almost unbelieving public found it hard to comprehend that on the eve of the United Nations Conference in San Francisco, and the cessation of hostilities in Europe, the President in whom they had placed so much confidence was dead. The life of a great President, considered by many to be one of the greatest, had passed into history.

Even at the beginning of his life, Franklin Roosevelt was firmly rooted in American history, for the Roosevelt family, from the standpoint of genealogy, was an old and truly American one. The President once stated that in 1776 every one of his ancestors then alive was in America, many of them having come over on the *Mayflower*. Franklin's family, as distinguished from Theodore Roosevelt's, was more English than Dutch, with a slight mixture of Swedish (Benson), German (Hardenbroeck), and Scotch (Murray). The Delanos were also of early American origin, with some French and Flemish ancestors. Franklin Delano Roosevelt himself, the only child of James and Sara Delano Roosevelt, was born on January 30, 1882, in a stately mansion on the thousand-acre family estate overlooking the Hudson River near Hyde Park, Dutchess County, New York. His mother was a famous beauty of New York society, and his father, who was just twice the age of his bride when he married at fifty-two, was a prominent railroad man.

The day of Franklin's birth was almost a tragic one, for it was later revealed that both mother and son had inhaled too much chloroform. They were promptly revived, however, and were fully recovered in a few days. The boy weighed 10 pounds at birth and was a normal husky baby. When he was a few months old, Franklin was christened at the ivy-covered St. James Episcopal Church at Hyde Park. His godfather was Elliott Roosevelt, only brother of Theodore Roosevelt. On that day Mrs. Sara Delano Roosevelt wrote in her diary:

"At 11 o'clock we took darling Baby to the chapel in his prettiest clothes and best behavior. Dr. Cady christened him 'Franklin Delano.' . . . Baby was quite good and lovely so we were proud of him."

As a boy, young Franklin was never particularly robust, but his health was very good. When he was five years old, he was a slender lad, slightly above the average in height, and had straight, wiry blond hair which was

cut very short and parted in the middle. During these early years he had none of the ordinary diseases common to childhood, mainly because he did not go to school until he was fourteen and thus escaped contact with sick children. He was a happy, vigorous and handsome boy, and even when quite young he enjoyed hunting, fishing, horseback riding, and sailing. He grew up in an atmosphere of freedom and physical comfort, and nothing that he wanted that could reasonably be granted was denied him.

Young Roosevelt was eleven years old when he had his first accident. He was attending the launching of a whaleback at the former American Shipbuilding Company yards at Superior, Wisconsin, with his father. As the ship hit the water, a large wave started to roll, and washing over the pier, it swept Franklin into the bay. A bystander, Fred J. Ross, leaned from the pier and pulled the struggling youth to safety, and the ducking had no serious consequences.

When Franklin was fourteen, he entered Groton, a private preparatory school, and thereafter his health picture changed considerably. During his first year he developed scarlet fever. He was promptly put in quarantine, but his mother saw him daily by climbing a ladder and talking to her son through the window. The scarlet fever was followed shortly by an attack of mumps, which was rather mild in type. In 1898, when Franklin was sixteen and in his junior year, he and a friend planned to run away and join the navy in the war with Spain. They arranged to have a bakery truck smuggle them out of the campus, but on the eve of their departure they both came down with severe cases of measles. Franklin's naval career was thus nipped in the bud, but throughout the rest of his life the navy remained close to his heart.

Franklin did not have any formal schooling prior to his enrollment at Groton. His mother was his first teacher, and private tutors had carried on from there. By the time he was ready for prep school, however, he had mastered French, German and Spanish, and had an intimate knowledge of sailing, navigation, geography, and natural history. After a rather mediocre four years at Groton, Roosevelt entered Harvard in October, 1900, at the age of eighteen. His own choice would have been the United States Naval Academy, but his father had dissuaded him from this course. As a student at Harvard, Roosevelt presented a picture of healthy young manhood, 6 feet and 1 inch tall and well-proportioned in spite of the fact that his weight never topped 150 pounds. Although he played on the freshman football team and rowed on the freshman crew, he was never very successful at athletics. Debate, writing, and management were more to his liking. He was also a member of Alpha Delta Phi fraternity, and his scholarship was good enough to win him the coveted key of Phi Beta Kappa. On graduation from Harvard in 1904, he entered the Columbia Law School, where he spent three years but from which he never graduated. However, he passed his bar examination in 1907 and acted as clerk in the firm of Carter, Ledyard, and Milburn until he established a firm of his own.

Pictures taken during Roosevelt's college years show that at that time he

wore glasses. He was evidently myopic, or near-sighted, because in later years he could read easily without glasses. The explanation for this is that his myopia was neutralized by far-sighted presbyopia, or old age sight, which made glasses unnecessary, except on infrequent occasions when he wore bifocals.

It was while Roosevelt was a senior at Harvard that he dramatically announced his intention to marry his distant cousin, Anna Eleanor, daughter of Elliott Roosevelt, who was then nineteen years old. His mother had different ideas, however, and immediately took Franklin and his roommate, Lathrop Brown, on a West Indies cruise. If this trip was intended to make her son forget Eleanor, it was unsuccessful, for on March 17, 1905, the young couple was married by Dr. Peabody, headmaster at Groton. Lathrop Brown was best man and Alice Roosevelt, daughter of Teddy Roosevelt, was maid of honor. President Theodore Roosevelt gave away the bride, who was his niece and goddaughter.

There were two shadows on the early married life of the young Roosevelts—the mild clash between Eleanor and her mother-in-law while living under the same roof, and the death in infancy of their second son, born in 1909 and christened Franklin Delano, Jr. Another son was to bear his father's name, however, and before long, the Roosevelts had a thriving family of five children—Anna Eleanor, born 1906, James, born 1907, Elliott, born 1910, Franklin Delano, Jr., born 1914, and John Aspinwall, born 1916.

In the spring of 1913, while serving his second term as state senator, Roosevelt became very sick, suffering from chills and a high temperature. The family physician pronounced the illness typhoid fever. For many weeks, Roosevelt was too ill to leave his room, but his confinement had one compensation—the beginning of a very close friendship with Louis McHenry Howe which was to bear fruit in future years. Very shortly after this illness, Roosevelt was offered the post of Assistant Secretary of the Navy by Josephus Daniels. Accepting this opportunity to serve the Navy he loved, he was sworn in on March 17, 1913, at the age of thirty-one. The following year his health suffered another setback when he had an emergency operation for acute appendicitis. This was followed by a severe acute pharyngitis, or sore throat, and it was several weeks before he was able to return to his office in the Navy Department.

On July 9, 1918, Roosevelt sailed on the destroyer *Dyer* for Europe. The purpose of the trip was to inspect the American naval forces in European waters and the ground forces in actual combat. It was a very rough but uneventful passage. On the return trip he embarked on the *Leviathan* and was out but a short time when he came down with an attack of the influenza which was so prevalent at that time. The ship's doctor remarked that it was better to pick up the flu in Brest than be a victim of the infantile paralysis epidemic which was raging at about the same time in New York. Ironically enough, Roosevelt's answer to this prophetic remark was: "Well, it's getting pretty late in life to catch a thing like that." Roosevelt was expressing one of the popular misconceptions which were then prevalent

concerning polio, a misconception tragically contradicted by his own later experience. Meanwhile, his shipboard illness had developed into a typical flu pneumonia, with congestion of both lungs, cough, and nosebleed. When the ship docked at New York harbor, he was carried on a stretcher to a waiting ambulance, but, once home, his recovery was complete and reasonably quick.

It was three years later, when Roosevelt was thirty-nine, that the great blow fell. In mid-August, 1921, the Roosevelt family was vacationing at their summer home on Campobello Island, New Brunswick. One day, Dad and the boys decided to go for a picnic and sail. After fishing for a while, they started for home, but on the way they stopped on an island to help the local people fight a forest fire. They arrived home about four in the afternoon, dirty and tired, and decided to take a swim in a quiet little lake nearby. Afterwards they all raced home again, and Roosevelt, finding that the water made him feel better, went for another swim in the Bay of Fundy where the water was very cold. He then trotted the mile back to the house. Still in his wet bathing-suit, he sat down on the porch to read his mail. Suddenly his teeth started to chatter, and he had a severe chill. He was immediately put to bed, covered with blankets, and provided with hot water bags. The next morning he had symptoms of a cold and a peculiar feeling in his legs. The second day he was unable to move his legs, and Dr. W. W. Keen, of Philadelphia, who was vacationing at Bar Harbor, was called. He decided that Roosevelt had some form of paralysis but could make no definite diagnosis. Finally, at the suggestion of Roosevelt's uncle, Frederic Delano, Dr. Robert S. Lovett, of Boston, a famous specialist, was summoned to Campobello, and it was he who pronounced the disease anterior poliomyelitis, or infantile paralysis.

When the verdict became known, the shock to Roosevelt's family was terrible. For several weeks he hovered between life and death, and when at last he was able to be moved, he was taken to the Presbyterian Hospital in New York City. He was not discharged until a few days before Christmas of the same year, and when he returned to his home on East 65th Street, his legs were in plaster casts. There followed months and years of pain and helplessness, but Roosevelt never let his paralysis defeat him, and there was never a word of complaint from the sturdy and courageous patient. It was with his typical humor and bravery that he remarked, "No one knows how much fun it would be to wiggle just one little toe."

By the spring of 1922, Roosevelt had recovered sufficiently to sit on the floor and rough-house with his boys. In 1923 he was back at work on crutches. Through the spring of 1924, Roosevelt continued to take treatments from Dr. Lovett, and braces were fixed up and many exercises taken. His physician also had a theory that his paralysis patients got along much better and their muscle tone increased more quickly when they exercised in warm rather than cold water. About September 1, 1924, Roosevelt became interested in the Warm Springs in Georgia through a Mr. Peabody, who told of a patient who had been unable to walk but had taught him-

self to use his legs in the deep water. This patient gradually walked in shallower water, and after a few months was able to walk on dry land. Roosevelt spent six weeks at the Springs and found that the buoyancy and warmth of the water gave him a chance to exercise his paralyzed and atrophied legs. His enthusiasm about the beneficial effects of the Georgia Warm Springs was the beginning of its establishment as a national institution. After a thorough investigation by a national orthopedic association, Roosevelt put a good share of his personal fortune into the Georgia Warm Springs Foundation, a nonprofit organization, and also built the "Little White House" on the grounds for his personal use.

Roosevelt's keen insight and introspective nature are no better exemplified than in a letter he wrote to Dr. William Egleston of Hartsville, South Carolina, concerning his personal ideas and a very complete case history of his struggle with infantile paralysis. This letter, which will probably become one of the most famous of "medical case reports" written by a layman, was written while taking treatment at Warm Springs. The letter is quoted as follows:

Warm Springs, Georgia
October 11, 1924

My dear Dr. Egleston:

Please excuse my delay in replying to your letter which has been forwarded to me down here in your neighboring state where I am spending a few weeks swimming and getting sunlight for my legs.

I am very glad to tell you what I can in regard to my case, and as I have talked it over with a great many doctors can, I think, give you a history of the case which would be equal to theirs.

First symptoms of the illness appeared in August, 1921, when I was thoroughly tired from overwork. I first had a chill in the evening which lasted practically all night. The following morning the muscles of the right knee appeared weak and by afternoon I was unable to support my weight on my right leg. That evening the left knee began to weaken also and by the following morning I was unable to stand up. This was accompanied by a continuing temperature of about 102 and I felt thoroughly achy all over. By the end of the third day practically all muscles from the chest down were involved. Above the chest the only symptom was a weakening of the two large thumb muscles making it impossible to write. There was no special pain along the spine and no rigidity of the neck.

For the following two weeks I had to be catheterized and there was slight, though not severe, difficulty in controlling the bowels. The fever lasted for only 6 or 7 days, but all the muscles from the hips down were extremely sensitive to the touch and I had to have the knees supported by pillows. This condition of extreme discomfort lasted about 3 weeks. I was then moved to a New York hospital and finally moved home in November, being able by that time to sit up in a wheel chair, but the leg muscles remained extremely sensitive and this sensitiveness disappeared gradually over a period of 6 months, the last remaining point being the calf muscles.

As to treatment—the mistake was made for the first 10 days of giving my feet and lower legs rather heavy massage. This was stopped by Dr. Lovett of Boston who was, without doubt, the greatest specialist on infantile paralysis. In January, 1922, 5 months after the attack he found that the muscles behind the knees had contracted and that there was a tendency to foot-drop in the right foot. These were corrected by the use of plaster casts during two weeks. In February, 1922, braces were fitted on each leg from the hips to the shoes, and I was able to stand

up and learned gradually to walk with crutches. At the same time gentle exercises were begun, first every other day, then daily, exercising each muscle 10 times and seeking to avoid any undue strain by giving each muscle the correct movement with gravity. These exercises I did on a board placed on the bed.

The recovery of muscle paralysis began at this time, though for many months it seemed to make little progress. In the summer of 1922 I began swimming and found that this exercise seemed better adapted than any other because all weight was removed from the legs and I was able to move the legs in the water far better than I had expected. Since that time, i.e., for the last two years, I have as far as possible in connection with my work and other duties, carried out practically the same treatment with the result that the muscles have increased in power to a remarkable extent and the improvement in the past 6 months has been even more rapid than at any previous time.

I still wear braces, of course, because the quadriceps are not yet strong enough to bear my weight. One year ago I was able to stand in fresh water without braces when the water was up to my chin. Six months ago I could stand in water up to the top of my shoulders and today can stand in water just level with my arm pits. This is a very simple method for me of determining how fast the quadriceps are coming back. Aside from these muscles the waist muscles on the right side are still weak and the outside muscles on the right leg have strengthened so much more than the inside muscles that they pull my right foot outward. I continue corrective exercises for all the muscles.

To sum up I would give you the following "Don'ts":

Don't use heavy massage but use light massage rubbing always toward the heart.

Don't let the patient over-exercise any muscle or get tired.

Don't let the patient feel cold, especially the legs, feet or any other part affected. Progress stops entirely when the legs or feet are cold.

Don't let the patient get too fat.

The following treatment is so far the best judging from my own experience and that of hundreds of other cases which I have studied:

1. Gentle exercise especially for the muscles which seem to be worst affected.

2. Gentle skin rubbing—not muscle kneading—bearing in mind that good circulation is a prime requisite.

3. Swimming in warm water—lots of it.

4. Sunlight—all the patient can get, especially direct sunlight on the affected parts. It would be ideal to lie in the sun all day with nothing on. This is difficult to accomplish but the nearest approach to it is a bathing suit.

5. Belief on the patient's part that the muscles are coming back and will eventually regain recovery of the affected parts. There are cases known in Norway where adults have taken the disease and not been able to walk until after a lapse of 10 or even 12 years.

I hope that your patient has not got a very severe case. They all differ, of course, in the degree in which the parts are affected. If braces are necessary there is a man in New York, whose name I will send you if you wish when I get back to New York, who makes remarkable light braces of duraluminum. My first braces of steel weighed 7 lbs. apiece—my new ones weigh only 4 lbs. apiece. Remember that braces are only for the convenience of the patient in getting around—a leg in a brace does not have a chance for muscle development. This muscle development must come through exercise when the brace is not on—such as swimming, etc.

I trust that your own daughter is wholly well again.

Very truly yours,
FRANKLIN D. ROOSEVELT

William Egleston, M.D.
Hartsville, S. C.

For some time Roosevelt continued to use crutches to get about. His first public appearance without them was made when he entered Convention Hall in Houston, Texas, using only a cane and leaning on the arm of his son, Elliott. By this time, Roosevelt had developed unusual endurance and physical power above the waist. His heart, lungs, and other internal organs were in perfect condition, and he had enormous strength in his arms, wrists, and hands, which he used to lift and lower himself into chairs and automobiles and to balance himself when standing. His legs were still atrophied and practically useless except when a brace was used. This steel brace weighed about 10 pounds and was fastened around his waist and then clamped to the heels of his shoes. It was jointed at the knees, and when preparing to stand or walk, he stretched his legs before him and clicked the joints of the brace into place. With this brace he was able to walk with the aid of two canes or with one cane and the arm of a companion. He kept in condition by doing setting-up exercises every morning in bed and by swimming.

It was during Roosevelt's first term as governor of New York State that the first of two attempts was made on his life. In April, 1929, a bomb addressed to him was found in the Albany post office. A porter accidentally kicked the package, setting the fuse to spluttering, but it was dropped in a pail of water and failed to go off.

The second attempt at assassination occurred in Miami, Florida, on February 15, 1933, about one month before Roosevelt's first inauguration as President. Roosevelt had just returned from a pleasure cruise in West Indian waters aboard Vincent Astor's yacht, the *Nourmahal*. He had landed and was on his way to board a train to carry him north, when he stopped to deliver an open-air address at Bay Front Park. With him in the car was Mayor Gauthier of Miami, and together they rode to a place in front of the crowd, which was seated in the vast arena of benches. At the conclusion of his speech, Roosevelt beckoned to Mayor Anton Cermak of Chicago, who was sitting close by in the band-stand, to join him, and then turned his attention to a telegram which had just been handed to him.

Suddenly several shots rang out, fired by Giuseppe Zangara of Hackensack, New Jersey. In a direct line with the first bullet stood Margaret Kruis, a show girl, who dropped to the ground with a wound in her hand. The second bullet hit Mayor Cermak on the right side of his abdomen just below the ribs. As he fell to his knees, blood began to ooze through his white shirt. At this time the two people closest to Zangara, a Miami contractor and the wife of a Miami physician, grappled with the assassin, one deflecting his right arm and the other grasping his wrist. But the Italian's trigger finger was still free, and he kept on shooting. A Mrs. Joseph Gill, wife of the president of the Florida Light and Power Company, was wounded in the abdomen; William Sinnott, one of Roosevelt's former guards, was struck on the head by another bullet; and the fifth and last bullet struck a man named Russell Caldwell.

Both during and after the shooting, Roosevelt, the intended victim, showed

the greatest coolness and courage, and immediately afterwards he drove to the hospital where the victims had been taken. Four of the patients recovered, but Mayor Cermak died a few days later.

Shortly after this tragic affair, Roosevelt, at the age of fifty-one, was inaugurated as President. He took office for his first term in exceptionally good health. Except for the paralysis of his legs from poliomyelitis, he had absolutely no signs of organic disease. Despite this fact, however, there were many rumors that he was not physically fit to endure the hardships and responsibilities of the presidency. Partly to dispel these rumors, Roosevelt took out a \$50,000 insurance policy on his life and passed the physical examination without any trouble. This corroborated the findings of a similar examination which he had had in October, 1930, when a \$500,000 policy on his life was issued by twenty-two companies, with the Georgia Warm Spring Foundation as the beneficiary. On that occasion, Dr. E. W. Beckwith, medical director of the Equitable Life Assurance Society, had been exceptionally thorough in his physical examination because of the large amount of money involved and because of the organic changes from Roosevelt's previous attack of poliomyelitis.

During his entire career as President, Roosevelt was under the constant attention of his personal physician, Vice Admiral Ross T. McIntire. Dr. McIntire was trained as an ophthalmologist and otolaryngologist, training that was particularly apropos considering the fact that his patient's most common illnesses were those of the upper respiratory tract. He also served as Surgeon General of the United States Navy. During Roosevelt's first term, Dr. McIntire had few occasions to prescribe for his patient. The President did not miss a single day from his work, and the few days that he stayed in his White House bedroom because of head colds did not interrupt the routine of his office. The worst cold he ever had was in April, 1934, while he was again cruising among the Bahamas on the *Nourmahal*. The trip was prolonged for one week, and by that time Roosevelt had recovered completely from the infection, which undoubtedly was influenzal in type. To keep fit, he swam in the White House swimming pool for fifteen or twenty minutes almost daily, and on the advice of his physician he ate rather lightly.

During his second term, Roosevelt continued to have head colds, despite every precaution. He was not able to acquire any immunity to this distressing disease, although his colds had fewer complications at this time. Dr. McIntire continued to give the President a very complete physical examination every six months. His best weight usually averaged between 182 and 184 pounds, and whenever he topped 185 a diet was immediately prescribed. In the spring and early summer of 1937, after suffering from fatigue and emotional strain, his systolic blood pressure rose 6 or 8 points over the average figure. Later, mid-October of the same year, Roosevelt became very sick with a severe intestinal infection which was thought to have been caused by eating tainted food. He had hardly recovered from this trouble when he developed a severe toothache. The tissues around an

upper molar became very swollen and red, and his temperature rose to 100.6°. As soon as the inflammation subsided, the tooth was extracted, and Roosevelt spent a convalescent period on a trip to the Gulf of Mexico. The wound did not heal readily and a fistula developed, but he made a complete recovery shortly after returning to Washington.

The question of Roosevelt's health in the last six or seven years of his life is a most interesting one, but one which is snarled considerably by medical ethics. It was in the late summer of 1938, while Roosevelt was visiting a son at the Mayo Clinic in Rochester, Minnesota, that the first of a series of strokes occurred. The attack was light and the hemorrhage evidently small because recovery was quick and complete.

In spite of these ailments, Roosevelt's general health continued to be good. As he neared the age of sixty, his hair began to gray and he showed signs of fatigue, but his buoyant disposition helped to overcome the strains of his office. He had the happy faculty of getting along with almost everybody. He liked to talk to people, had a good sense of humor, and possessed that indefinable quality of personal magnetism that is often found in the world's great leaders. A characteristic pose of the President, when in conference or listening to visitors, was to sit in his upholstered armchair with a long ivory cigarette holder in his mouth. The direction in which the cigarette holder pointed depended on his mood of the moment—up when in good humor, and straight ahead like a gun at point-blank range when he was serious. He smoked an average of two packages a day of a popular brand of cigarettes.

Late in his second term, Roosevelt's weight averaged 185 pounds, and he was cautioned only when it went over 188 pounds. In April, 1940, the President developed an intermittent and persistent low grade fever. He referred to his sickness as a "touch of swamp fever," but it was actually a mild intestinal influenza. He lost 10 pounds in weight, but threw off the infection before very long. His physical condition was still good, and from the waist up he had the build of a heavyweight boxer. His arms and hands were large and muscular as compensation for the loss of the use of his legs. His blood pressure was within the normal limits of fluctuation due to strain, fatigue, excitement, or illness, and his heart and lungs were normal at every examination.

Frequent but not serious ailments continued to plague the President in his third term. On February 25, 1943, he had another slight attack of intestinal influenza, but the fever was mild and he was bedridden for only three or four days. About one month later, he contracted a mild head cold, followed by an infection in his sinuses. During the few days that this infection lasted, Mrs. Roosevelt announced that the President had given up drinking coffee for breakfast and was substituting milk instead. In October of the same year, Roosevelt suffered a spell of gripe, which was unintentionally called "gripe" in the British papers. Needless to say, apologies followed as soon as the error was discovered.

Up until the end of 1943, Roosevelt's sixty-first year, there had been

no marked decline in his health. The steady procession of minor infections had no doubt had an effect and probably indicated an increasing lack of constitutional resistance, but Roosevelt still gave every appearance of physical strength and endurance. Following his trip to Cairo and Teheran in December of 1943, however, there seemed to be a definite turning point in his health. Another influenzal infection left him a much weakened man. He lost 8 or 10 pounds, and his drawn face and almost haggard look about the eyes caused considerable alarm. There was talk that he had suffered a heart attack, probably a coronary thrombosis, but there was nothing to corroborate the rumor. That he was a sick man was readily recognized at his press conferences. About this time, a parade of doctors was called to the White House. Everyone refused to talk for publication, but some of the physicians privately discussed Roosevelt's symptoms. They agreed that he had had a stroke and was suffering from general deterioration, and two of them doubted that he could live until July 1, 1944.

Official information concerning Roosevelt's health was given in January, 1944, when Dr. McIntire announced that the President had suffered from an attack of influenza lasting for two weeks. He had lost about 10 pounds and his convalescence was more prolonged than previously. Two months later, Roosevelt had an exceptionally severe upper respiratory infection. At its inception he was put to bed, but his temperature started to rise and the nasal infection spread to his sinuses. Local treatment was instituted by Dr. McIntire, but hoarseness soon appeared due to involvement of the larynx. An irritating cough was treated with a mild syrup. Steam inhalations were also used, but in spite of everything, a very severe bronchitis developed. The patient now was seriously ill. He refused to be alarmed, however, when he learned that only one case in 48,500 developed pneumonia from a bronchitis. When he had regained enough strength, Roosevelt was taken to the Naval Medical Center at Bethesda, Maryland, where a group of doctors under the guidance of Dr. McIntire made a most thorough and exhaustive physical examination, including a complete x-ray study of his whole body. The results revealed that the President's physical condition was "satisfactory" except for lingering traces of bronchial irritation and a residual sinus infection. His hoarseness continued for several weeks after he resumed work.

In an effort to shake off the lingering traces of this illness, Roosevelt spent almost the entire month of April, 1944, at Hobcaw Barony, Bernard M. Baruch's plantation near Georgetown, South Carolina, a community that had been visited by four Presidents before him—Washington, Monroe, Van Buren, and Cleveland. During this month of rest, he took sun baths every day, slept twelve hours every night, went fishing when so inclined, and cruised the waterways and highways just for fun. The setup was so ideal that the originally planned two weeks' vacation was extended to four weeks. At the end of his holiday his color had improved, though a pallor was still visible under his tanned skin, and his face had lost some of its wrinkles. There were traces of bronchial infection remaining, however, so late in May, Dr. McIntire ordered another complete physical and x-ray

examination at the Naval Medical Center. The results of these examinations were very satisfactory, and it seemed as if the President were back on the road to complete good health. (In June, 1944, one examining physician gave a private opinion there was a 50-50 chance that Roosevelt would not live to end out his term—the third one.)

Through the early fall of 1944, Roosevelt again had several head colds, one of them during his conference with Prime Minister Winston Churchill at Quebec. His general health seemed satisfactory, however, although he was seldom able to take exercises or his accustomed daily swim in the pool. His cumbersome and uncomfortable leg braces were now virtually abandoned, and he made fewer attempts to get around under his own power. At about this time he also cut down considerably on smoking cigarettes, reducing his quota from two packs a day to a good deal less than one pack. This move again brought out the rumors in medical circles that he might have had a heart attack.

In the fall of 1944 there were many rumors of the President's poor health, which seemed to affect his political campaign adversely. New Dealers insisted that Roosevelt make a public appearance to quiet these rumors. The day set for the occasion turned out to be raw and wet, and Roosevelt's family objected very strenuously to the trip because of the weather. However, Admiral McIntire pronounced the President fit to make an appearance, and the family was overruled.

Twelve years in the White House had produced inevitable changes in Roosevelt's health. As he entered his fourth term, these changes were reflected in his appearance as well. He was 6 to 8 pounds lighter than at his first inauguration, and his face had a wan and haggard look, with many more wrinkles than before. Yet, a survey of other Presidents who had begun their terms at the age of sixty-one or more might have seemed a basis for optimism. Washington, John Adams, Jefferson, and Madison, all sixty-one years old at the time of their final inauguration, had lived to reach the ages of sixty-seven, ninety, eighty-three, and eighty-five, respectively. Andrew Jackson, inaugurated at sixty-five, outlived his term by nine years. Harrison was sixty-eight and Taylor sixty-four at the beginning of their presidencies, and both died in office. Buchanan, inaugurated at sixty-five, lived eight years beyond his term. Thus, of eight Presidents who entered office in their sixties, six survived their terms with many years to spare. Among Roosevelt's recent predecessors, however, the picture was more gloomy. Less than eight years as incumbent had wrecked the health of Woodrow Wilson; Warren G. Harding had died after two and a half years in office; and Calvin Coolidge outlived his term by only a few years. Roosevelt himself had borne greater responsibilities, and for a longer time, than any other President. He had led his country through the worst depression and most cataclysmic war in history, and his transatlantic journeys to Teheran and Yalta were the final strain in an extremely strenuous presidential career. Small wonder that he was beginning to show the effects of his burden.

Roosevelt now made no pretense of walking and permanently discarded

his braces. For the first time he delivered an address to Congress while seated in a wheelchair, and joked with his audience about it. Certain personality changes began to appear, changes which might have been the result of a minor cerebral hemorrhage months before his death. He was more nervous and jumpy, more easily irritated by small things. On this return from Yalta, a grayish pallor was noticed in his skin. At one press conference, his face took on a purplish flush and then faded again to its original pallor, an unmistakable sign of changes going on in the vascular system. Coincident with these signs, the President's blood pressure had increased slightly, and he complained that he derived no taste or pleasure from his food. His voice became weaker and those who heard his radio broadcasts noticed that his diction had lost some of its former flawless clarity. His hearing also became increasingly impaired, probably as a result of a chronic catarrhal inflammation of the middle ears and Eustachian tubes caused by his frequent colds. Involvement of certain nerve centers in the brain due to vascular changes might also have been responsible to some extent for his partial deafness. After his next to the last press conference, all agreed that his health was failing very rapidly and he was "a dead leaf on a limb, waiting to be blown off." There was no conspiracy to keep this from the public, except the customary one of misguided conventionality.

All signs pointed to the fact that the President's state of health was now precarious. In January, 1945, United States Secret Servicemen were told by their superiors that Roosevelt was in seriously poor health, and obvious precautions were taken—a bodyguard for Vice President Truman was chosen and told to stand by for a sudden call to duty. The call came on about March 1, and from that time on Truman, the new President-to-be, was guarded day and night.

In March, 1945, Roosevelt entertained the Earl of Athlone, governor general of Canada, and his wife, Princess Alice, for a two-day visit at the White House. After this visit, he went directly to Hyde Park, where on March 25, 1945, Palm Sunday, he suffered a severe cerebral hemorrhage. Members of his official family said they feared the end was near. But he recovered sufficiently so that on March 30, 1945, a special train carried him to Warm Springs for the purpose of getting a good rest under favorable conditions. The fact that Dr. McIntire remained in Washington is evidence that Roosevelt's condition was not regarded as serious and that no apprehension was felt for his immediate future. However, some of those who saw the President just before he left for Warm Springs described him as looking ghastly, and at a press conference on April 5 it was noticed that he had regained neither his color nor his weight. On April 11, Secretary Morgenthau had a pleasant visit with his old friend and neighbor who seemed to be in very good spirits.

In the morning of that eventful day of April 12, 1945, Roosevelt telephoned to the White House and informed his secretary, Jonathan Daniels, that he was preparing a speech to be read over the radio two days later. Dr. McIntire also talked by phone with Lieutenant Commander Fox who

was at Warm Springs and who assured him that everything was fine. During the noor hour the President sat in his favorite leather chair in the living room of the "Little White House," looking over some state papers. Miss Margaret Suckley, a cousin, was crocheting in a nearby chair. Mrs. Elizabeth Shoumatoff, an artist, was sitting directly opposite him, doing some sketching for a new portrait. In 1943 she had done a water color of Roosevelt wearing his favorite navy cape, a portrait which he had liked very much.

At about one o'clock, Roosevelt suddenly looked up and said, "I have a terrific headache." Those were his last words. The pain seemed to be in the occipital region, the back of the head just above the neck. He raised his left hand to his head and pressed his temple, then ran his hand around his forehead and kept pressing it. Almost immediately after that he slumped down in his chair as though he had fainted. At this time, about 1:15 p.m., the initial break in his cerebral blood vessel occurred. He never regained consciousness.

Knowing there was something seriously wrong, Miss Suckley quickly called to Arthur Prettyman, a veteran of twenty years in the navy, who was Roosevelt's colored valet. With the help of Joe, a Filipino mess boy, Prettyman carried the unconscious man to his bedroom. They untied his tie—he had worn a four-in-hand that day instead of his usual bow tie—and removed his blue-gray suit, shirt, and shoes, and then put on his pajamas. In the meantime, a call had been put through to Commander Howard G. Bruenn, who was acting temporarily as the President's personal physician. He entered the sick room at 1:30 p.m. just fifteen minutes after the patient became unconscious. Dr. Bruenn, a heart specialist of the navy surgeon general's staff who had been detailed to the President fifteen months earlier, then got in touch with Dr. McIntire at Washington. Dr. McIntire in turn called Dr. James E. Paullin of Atlanta, who was a specialist in internal medicine, and asked him to go to Warm Springs immediately. Dr. Paullin made the eighty-five mile trip in record time. On seeing the patient, he agreed with Dr. Bruenn that the case was hopeless and that there was nothing that could be done.

During the next two hours, the hemorrhage continued to spread slowly, causing pressure on more and more of the brain tissue until finally all the vital functions of the body ceased. Death occurred at 3:35 p.m., the result of a massive cerebral hemorrhage. Once the blood vessel in the brain had broken, there was no let-up until death ensued. In the bedroom at the time of Roosevelt's death were Dr. Bruenn, Dr. Paullin, and Lieutenant Commander George Fox, White House pharmacist, who for years had been at the President's side before he retired each night, helping to relax Roosevelt's muscles by massage. Others present in the house were William Hassett, presidential secretary, Miss Grace Tully, confidential secretary, and two cousins, Miss Laura Delano and Miss Margaret Suckley.

After being prepared for burial, the body of President Roosevelt was put aboard a special train which left Warm Springs at eleven o'clock on

Friday morning, April 13, for the twenty-three-hour trip to Washington. The funeral was held in the East Room of the White House on Saturday at four o'clock, and then the President's body was sent on for burial at Hyde Park. At ten o'clock Sunday morning, April 15, Franklin Roosevelt was laid to rest in the cedar-hedged rose garden between the rambling stone and stucco house and the Roosevelt library. The Episcopal service was read by the Reverend George W. Anthony, rector of Hyde Park's St. James Episcopal Church, where the President was a senior warden for seventeen years. Roosevelt's favorite Biblical passage was spoken over his grave, the First Epistle of Paul to the Corinthians: "For now we see through a glass, darkly, but then face to face: Now I know in part; but then shall I know even as also I am known. And now abideth faith, hope, charity, these three; but the greatest of these is charity."

Roosevelt was the fourth President to be buried beside the Hudson River. The other three were Ulysses S. Grant, buried on Riverside Drive in New York City; Martin Van Buren, buried at Kinderhook, New York; and Chester Arthur, buried at Albany. Roosevelt was also the third President to die in office during the month of April. President William Henry Harrison died of pneumonia on April 4, 1841, one month after his inauguration, and Lincoln was assassinated April 15, 1865, forty-two days after the beginning of his second term. Of these three, Lincoln and Roosevelt were war Presidents and Harrison was elected on his record in battles against the Indians at Tippecanoe and in the War of 1812. Roosevelt's death also seemed to perpetuate a tradition that Presidents elected at twenty-year intervals die in office. These Presidents and the years in which they were elected are: William Henry Harrison—1840, Abraham Lincoln—1860, James A. Garfield—1880, William McKinley—1900, Warren G. Harding—1920, and Franklin D. Roosevelt—1940. By a peculiar twist of fate this tradition would still have carried on had Wendell Wilkie been elected in 1940.

Franklin Roosevelt, the thirty-first President, held that office longer than any man in history, and during his time dealt with the gravest problems which have ever faced the nation and the world. Like Wilson, he died before achieving the final aim of his career, the establishment of the foundations of permanent peace. There can be no question but that his tremendous responsibilities and cares impaired his health quite seriously, at least during his last years in office. For some time before his death there were several rumors in medical circles concerning the President's health. One of these was that he had had a mild cerebral hemorrhage on the day before he was reported to have left South Carolina for his holiday at Bernard Baruch's plantation. Another claimed that he had suffered an attack of coronary thrombosis after Teheran. Another story, never published, was that he had made a one-day trip to the Mayo Clinic at Rochester, Minnesota, where an examination revealed an inoperable tumor, possibly malignant, of the prostate gland. His loss of weight, wan, haggard countenance, and gradually increasing bodily weakness might have lent weight to this theory. However, none of these rumors was ever substantiated, and at least one recent

and very thorough examination by a distinguished physician, who was in no way connected with the administration, revealed the fact that the President's health was good.

An editorial in the *Saturday Evening Post* entitled, "Everybody Knew It But the People," is very apropos concerning the health of President Roosevelt when running for a fourth term and is hereby quoted, even though parts of it are repetition of what has already been incorporated into this chapter.

A few days after President Roosevelt's death, Walter Lippman wrote in his syndicated column: "Harry S. Truman was nominated at Chicago last July by a convention which was fully aware that it was almost certainly choosing a President of the United States. There was no secret about this during the campaign."

It is extraordinary that Mr. Lippman could make such a statement and pass no judgment on its implications. Actually, the state of Mr. Roosevelt's health was a secret from millions of Americans who voted for the President on the theory that he could reasonably be expected to live out his term of office, where he was indispensable if America was to achieve a strong and lasting peace. To be sure, some voters thought they detected signs of unfamiliar weakness in Mr. Roosevelt's radio voice. Others thought the pictures of the President revealed signs of serious illness, but doubters were continually assured by Admiral Ross McIntire, the President's medical adviser, that his patient was "in better physical condition than the average man of his age," that his health was "good, very good," that he was "in splendid shape." One purpose of the President's campaign tour of New York during a chilling rain was to dispel apprehensions regarding Mr. Roosevelt's health.

If the insiders were "fully aware" of the President's brief life expectancy, they made every effort to discourage the spread of that knowledge. Journalists or politicians who hinted that Mr. Roosevelt was not a well man were rebuked as little better than fifth columnists by the President's associates, who saw their one chance of continued power in the ability of the President to get through one more election. In May, 1944, one of the President's former assistants said of those who mentioned the subject, "Some, I am sorry to say, seem moved by a craving for bad news." Later, on October thirteenth, Chairman Robert Hannegan of the Democratic National Committee declared that "the people who don't want Roosevelt are conducting a whispering campaign" about the President's health. Asked whether this meant the Republicans, Mr. Hannegan said, "They are the people who don't want Roosevelt." Governor Dewey, of course, did not mention the subject at all, except in his reference to the "old and tired" men of the Roosevelt Administration. The people hooted, apparently not being "fully aware" that they were voting for Mr. Truman.

Why do we bring up this disagreeable subject now? For the only reason that can be given for mentioning it—namely, that it must not happen again. At any rate, some of it must not happen again. It is impossible to plan a precise course which will prevent a courageous President in failing health from daring fate once more, or discourage politicians dependent on the prestige of a popular leader from pushing an ailing man into a campaign. But at least we can make it plain that those who ask questions shall receive answers, and not be brushed off as malicious obstructionists, by the very people who come up after the fatal event with the news that they knew it all the time.

Reviewing Roosevelt's medical history, one finds that except for the usual childhood diseases the only serious attack that Roosevelt had until he arrived at Washington was infantile paralysis. Then, frequent head colds, which seem to be prevalent in that climate, plagued him. These head colds in themselves were never dangerous or even serious, but it was their com-

plications that taxed the President's constitution. He suffered recurrent attacks of sinusitis, bronchitis, and upper respiratory influenzal infections, along with several attacks of intestinal influenza, which he called "swamp fever." These repeated infections, plus the killing pace of the presidency, no doubt weakened him and made him an ideal target for his final and fatal illness.

Time alone can truly evaluate Franklin Roosevelt's importance to American history. Among his many admirable qualities, most important and outstanding was his indomitable courage which helped him conquer the hardest of personal afflictions and the worst handicaps of physical misfortune. His magnetic personality and unfailing good humor added to his stature, and these traits, combined with a matchless diplomacy, made him, in the opinion of many, one of the greatest leaders of all times. While he was not a deeply religious man, one could not help but recognize the inherent sincerity with which he invoked God's blessings and prayed for Divine guidance. Unofficially, the far-off Vatican noted the passing of this life-long Episcopalian with the tribute: "The most Christian among Statesmen." The final verdict—the completely objective evaluation of Roosevelt's contributions to the United States and to the world—must come from future historians.

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In the Final Analysis

LOOKING back over the medical histories of the various Presidents, one finds that medically, as well as in other ways, these men were fairly representative of their times. Chronic infections such as malaria, dysentery, typhoid fever, and cholera were very common among the first dozen or so Presidents, and scarcely any of them escaped a siege of some such infection. Among the more recent Presidents this type of illness has been much more infrequent, and on the few occasions it has appeared it has usually been much milder in form. This difference can be explained in part by the fact that in the days of Washington and his immediate successors, hygienic and sanitary facilities in the home were inadequate, to say the least. Even more significant is the fact that nearly every one of the early Presidents spent at least a part of his career in active service in the army, where sanitation was even poorer than in civil life and where the crowding together of large numbers of soldiers made epidemics almost inevitable. Armies today face the same problems, but modern preventive medicine and scientific research, working together, have made great strides toward reducing intestinal infections to a negligible minimum.

Just as the incidence of intestinal infection has decreased, both among the Presidents and the general population in more recent years, so the prevalence of heart disease has definitely increased in the United States. Statistics show that diseases of the heart cause more deaths in this country today than any other disease, and this increase is reflected in the case histories of the Presidents. Although more Presidents have died from coronary disease than from any other cause except cerebral hemorrhage, all but one, James Madison, died within approximately the last fifty years. Here again, the lives of the Presidents reflect a general trend in the medical state of the country.

Cerebral hemorrhage, also known as apoplexy or stroke, seems to have shown no significant statistical increase or decrease in frequency of occurrence throughout the country's history. But although it has never been a particularly common cause of death among the general population, it has killed more Presidents, both in early times and late, than any other single cause. A possible explanation for this discrepancy lies in the nature of the disease and the nature of the presidency. Cerebral hemorrhage usually results from one of the several changes that take place in the body during later life, namely, the loss of elasticity in the arteries. Not only do the arteries become more brittle as the body grows older, but parts of their membranous layer are replaced by a calcareous deposit. This condition is called arterio-

sclerosis, or hardening of the arteries, and occurs at an earlier age in some people than in others. Normally, the walls of the blood vessels can stand fourteen times the ordinary pressure of the blood without bursting; but when the arteries are hardened and there is an accompanying increase in blood pressure, a break in an arterial wall—a cerebral hemorrhage—is likely to occur eventually. Ordinarily, the break occurs in arteries nearest the surface where there is no protective layer of fat or connective tissue, so that cerebral vessels having the largest surface area are the most likely to break first, with hemorrhages in the layers of the eyeball and those in the nose being next in frequency. Under conditions of worry, anxiety, fatigue, and overexertion the break is apt to come sooner rather than later in life. This fact may help to explain why the Presidents, who bear such tremendous responsibilities and worries for an entire great nation, succumb to this condition more often than to any other.

In the case of tuberculosis, although its incidence has been great, only two of the Presidents, Andrew Jackson and Theodore Roosevelt, were ever actually infected by it. Similarly, cancer, which is rapidly becoming one of the greatest present-day menaces to health, has so far attacked only two of the country's chief executives—fatally in the case of Grant, and fortunately not in the case of Cleveland.

In a review of the actual causes of death among the Presidents, one finds that of the thirty Presidents discussed, seven died of cerebral hemorrhage—John Quincy Adams, John Tyler, Millard Fillmore, Andrew Johnson, Chester A. Arthur, Warren G. Harding, and Franklin D. Roosevelt. Suddenness is usually a characteristic of death from apoplexy, but the deaths of Harding and Roosevelt were particularly dramatic because both died in office. In three of these seven cases other medical conditions were contributory causes of death. John Tyler had been suffering from chronic bronchitis and recurrent dysentery, and Arthur, personifying the old adage, "Eat, drink, and be merry, for tomorrow we die," had had chronic nephritis, chronic myocarditis, and malaria. Harding may have had a slight cerebral hemorrhage prior to the one that killed him, and at the time of his death he had hypertension and was just recovering from bronchopneumonia.

The next largest group consists of the five Presidents who died of coronary disease. This is a disease of the coronary arteries, the blood vessels which are the only source of blood supply to the actual muscle tissue of the heart. When one of these arteries is affected by a thrombus—an obstructive clot of blood—or by sclerosis, the resulting condition is called coronary disease. The disease had different contributory causes in each of the five Presidents, James Madison, Rutherford B. Hayes, Grover Cleveland, Theodore Roosevelt, and Calvin Coolidge. In Madison's case, coronary sclerosis was complicated by chronic cholecystitis and hepatitis (gall bladder and liver inflammation), and possibly chronic malaria. Hayes' attack of angina pectoris, caused by a coronary thrombosis, had been immediately preceded by an upper respiratory infection. Cleveland suffered from myocardial degeneration and chronic nephritis, and Coolidge had a generalized arteriosclerosis along with a possible duodenal ulcer. In Theodore Roosevelt's case, the

coronary embolus that caused his death might have resulted from his mastoid infection, the fistulous abscess in this thigh, or infection following the extraction of an abscessed tooth.

Four Presidents died of congestive heart failure—John Adams, James Monroe, Martin Van Buren, and William Howard Taft. Here, a distinction has been made between coronary disease and congestive heart failure. As a matter of fact, these two causes of death might very properly be placed under the category of general heart failure, which would put this group in first place with nine deaths as against seven from cerebral hemorrhage. For the sake of clearness and simplicity, sudden deaths have been classified under coronary disease. Adam's heart failure was gradual, coupled with arteriosclerosis, involvement of the coronary artery, and a terminal hypostatic pneumonia. Monroe and Van Buren also suffered from general arteriosclerosis, and the former from an acute respiratory infection as well. Van Buren also had bronchial asthma, a condition that puts a great strain on the heart when prolonged. Taft's heart failure had a number of contributing causes—myocardial degeneration, arteriosclerosis, hypertension, cystitis (bladder inflammation), and prostatic hypertrophy (enlargement of the prostate gland).

Pneumonia caused the death of three Presidents, William Henry Harrison, James Buchanan, and Benjamin Harrison. The elder Harrison also had a chronic intestinal infection and cholecystitis, while his grandson's case was significant for being the first recorded in which oxygen was used in the terminal stage of pneumonia. In Buchanan's case, rheumatic endocarditis and arthritis were contributory causes of death.

Chronic intestinal infection, usually combined with other contributing conditions, claimed the lives of three Presidents. Thomas Jefferson died of amebic dysentery, complicated by heart failure, arteriosclerosis, cystitis, and hypertrophy of the prostate gland. There is also a possibility that he had a malignant tumor of the intestines. James Polk died of amebic dysentery and malaria, and Zachary Taylor succumbed to cholera morbus following heat exhaustion.

Of the remaining Presidents, Franklin Pierce died of cirrhosis of the liver, contributory factors being heart failure, bronchiectasis, and possible lesions in the stomach. The majority of the evidence points to pulmonary tuberculosis as the cause of Andrew Jackson's death, although he also had chronic nephritis and heart failure, and his bloody expectorations might have been explained by his previous chest injuries. Ulysses S. Grant died of cancer of the tongue, tonsil, and larynx, and Woodrow Wilson of cerebral thrombosis (a clot blocking a blood vessel in the brain) following general and cerebral arteriosclerosis. George Washington, after suffering a multiplicity of diseases, died of acute streptococcal pharyngitis, complicated by an edema of the larynx and septicemia, or blood poisoning. Modern methods, including injecting whole blood or plasma instead of removing it by blood-letting, and the use of the sulfonamides or penicillin, might have saved his life.

The final three Presidents, Abraham Lincoln, James Garfield, and William McKinley, died by assassination, in each case from gunshot wounds. The immediate cause of death in Lincoln's case was intracranial hemorrhage causing pressure on the vital centers of the brain. In the case of Garfield, septicemia and metastatic abscesses were the primary causes of death, complicated by the secondary factors of bronchopneumonia, coronary thrombosis, and rupture of a mesenteric artery with hemorrhage into the peritoneal cavity. McKinley died primarily of gangrene of the stomach wounds and mesentery, the pancreas, and the left kidney. It is possible that he also suffered a pulmonary embolism.

The question, "Could these men have been saved?" returns to plague the mind even though it can never be answered. Certainly many changes have taken place in the treatment of gunshot and open wounds since the assassination of the three Presidents. The experience gained during two World Wars has led to new ideas and new methods. The present-day basic treatment for shock is the injection of blood plasma and the immediate hypodermic injection of morphine which first aid workers or medical corps-men are trained to give. In flesh wounds, immediate and thorough cleansing with soap and water, irrigation of the wound with normal saline solution, and removal of debris, shell fragments, and bits of clothing are of greatest importance. Then, after debridement—the removal of dead or useless tissue by dissection—sulfanilamide powder is sprinkled generously into all parts of the wound and covered with vaseline-coated sterile dressings. No attempt is made to close these wounds by suture, as was done in the case of the wounded Presidents, except in face and chest wounds after taking all precautions. Even in head wounds, the essential factors are much the same if it is remembered that the control of bleeding and a clean wound hasten normal repair. Penetrating abdominal wounds are treated similarly, and exploratory laparotomies (opening abdominal cavity surgically) are postponed unless internal hemorrhage cannot be controlled. Improved methods of local and intravenous anesthesia have also changed the treatment of this type of wound. Today, the three assassinated Presidents might have had better chances of survival, but nevertheless, it seems apparent that they received the best surgical and medical care available at the time.

It is interesting to note that of the thirty Presidents whose medical histories have been reviewed, the average age at death for the first ten, up to and including John Tyler who died in 1862, is 77.4 years; for the second ten, from Polk to Garfield, 63.7 years; and for the Presidents from Arthur on, 63.1 years. Of the first group, John Adams lived to the age of ninety, three others were in their eighties when they died, and only two, Washington and William Henry Harrison, were under seventy at the time of their death. And this in spite of the epidemics of infectious diseases, the lack of sanitation, and the primitive state of medicine during most of that area! How can one explain the fact that despite all the advances of modern medicine, the Presidents of the twentieth century pre-decease their early predecessors by an average of more than fourteen years?

It was partly coincidence and a vagary of chance, no doubt, that gave the early Presidents such a record for longevity, for the average length of life for the population as a whole was considerably shorter in those days than it is today. But it is possible, too, that for men of the wealthier class, as most of these men were, once the dangerous years of infancy and childhood were passed, the more leisurely tempo of life enabled them to conserve their energies and health in a way that is difficult for national leaders under the pressures of modern times. Then, too, the duties of the presidency itself were more restricted in those days, both in geographical scope and in administrative power and responsibility.

Life insurance statisticians have now compiled a tabulation that lends additional force to the suggestion that the responsibilities of the presidency have outgrown the capacity of any one man to discharge. Eight of the first ten Presidents, they find, outlived their normal life expectancy as of the date of inauguration. Of the last ten, excluding President Truman and William B. McKinley, who was assassinated, seven failed to complete their allotted span of years. Grover Cleveland outlived his expectancy by a single year, William Howard Taft by two, and Herbert Hoover just reached the mark in 1946.

Presidents before 1850 lived an average of 2.9 years beyond the expectable age on the basis of mortality conditions then prevailing. Those inaugurated between 1850 and 1900 fell short by an average of 2.9 years, while the lives of those elected after 1900, leaving President Truman and Mr. Hoover out of the reckoning, were an average of eight years less than the expected span.

Insurance men who made these computations were careful to avoid any positive generalizations on the basis of so small a group. Undoubtedly, though, the physical and mental strains attending the office in modern times greatly exceed those of the days when this was predominantly an agricultural nation of a few million souls. It is hard to avoid the inference that the added burdens have tended to shorten the lives of the more recent incumbents. The records do show that defeated candidates have lived considerably longer, as a rule, than their successful rivals.

In general, however, the effect of high office on the Presidents' health has seemed to depend on individual differences. Some, like William Henry Harrison, broke under the strain, although he lived longer than many Presidents. James Polk, Andrew Jackson, and Warren Harding are others whose health suffered noticeably as a result of their presidencies. For some, however, great power and responsibility seemed to act as a tonic. Benjamin Harrison thrived and broadened out. His health improved because he knew how to take care of himself and learned to shift some of the responsibilities to other shoulders. This form of administration was not accepted by Cleveland or Wilson. They seemed to be unwilling to share their work, an attitude that was at least partially responsible for subsequent impairments in their health. But both Roosevelts, Theodore and Franklin,

who were similarly loath to delegate power and authority out of th own hands, up to a certain point thrived on the hard work they undertoo

Nevertheless, there seems to be no question but that all of the Preside have been subjected to undue worry and strain. The presidential office one of such importance to the country that every possible effort should made to insure each President against all avoidable ill health. The provisi of a personal physician to devote full time and attention to guarding t President's health is a step in the right direction. But each President hi self must co-operate. Minor details and routine procedures should be r egated to personal aides and assistants. Wholesome recreational facilit should be available at all times—and not only available but regularly use Proper food, moderate exercise, and most of all, definite rest periods, a essential in maintaining the health of the man who is regarded by all t world as the spokesman for the United States. With sensible care, medic skill, and God's blessing, the future Presidents of the nation may rival t vigorous longevity of Adams, Jefferson, and Madison.

